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TECHNICAL MANUAL

NO. 11-5820-1025-24&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 1 September 1988

UNIT AND INTERMEDIATE DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR RADIO SET AN/PRC-126 (NSN 5820-01-215-6181)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-MEPS, Fort Monmouth, New Jersey 07703-5000.

A reply will be furnished direct to you.

This manual is an authentication of the manufacturer's commercial literature which, through usage, has been found to cover the data required to maintain this equipment. Since the manual was not prepared in accordance with military specifications, the format has not been structured to consider levels of maintenance.

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SECTION O

INSTRUCTIONS

0-1 SCOPE.

This manual contains maintenance instructions for the Radio Set AN/PRC-126. Throughout this manual the nomenclatured item may also be referred to as either the Radio Set or the AN/PRC-126.

0-2 CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS.

Refer to the latest issue of DA Pam 25-30 to determine whether there are new additions, changes, or additional publications pertaining to this equipment.

0-3 MAINTENANCE FORMS, RECORDS, AND REPORTS.

a. Report of Maintenance and Unsatisfactory Equipment. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 Report of Discrepancy (ROD) as prescribed In AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73B/ARC 400-54/MCO 4430.3H.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 5538/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

0-4 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).

If your Radio Set needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-MA-D, Fort Monmouth, New Jersey 07703-5000. We'll send you a reply.

0-5 ADMINISTRATIVE STORAGE.

Administrative storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with PMCS charts before storing. When removing the equipment from administrative storage the PMCS should be performed to assure operational readiness.

0-6 DESTRUCTION OF ARMY ELECTRONICS MATERIEL.

Destruction of Army electronic materiel to prevent enemy use shall be in accordance with TM 750-244-2.

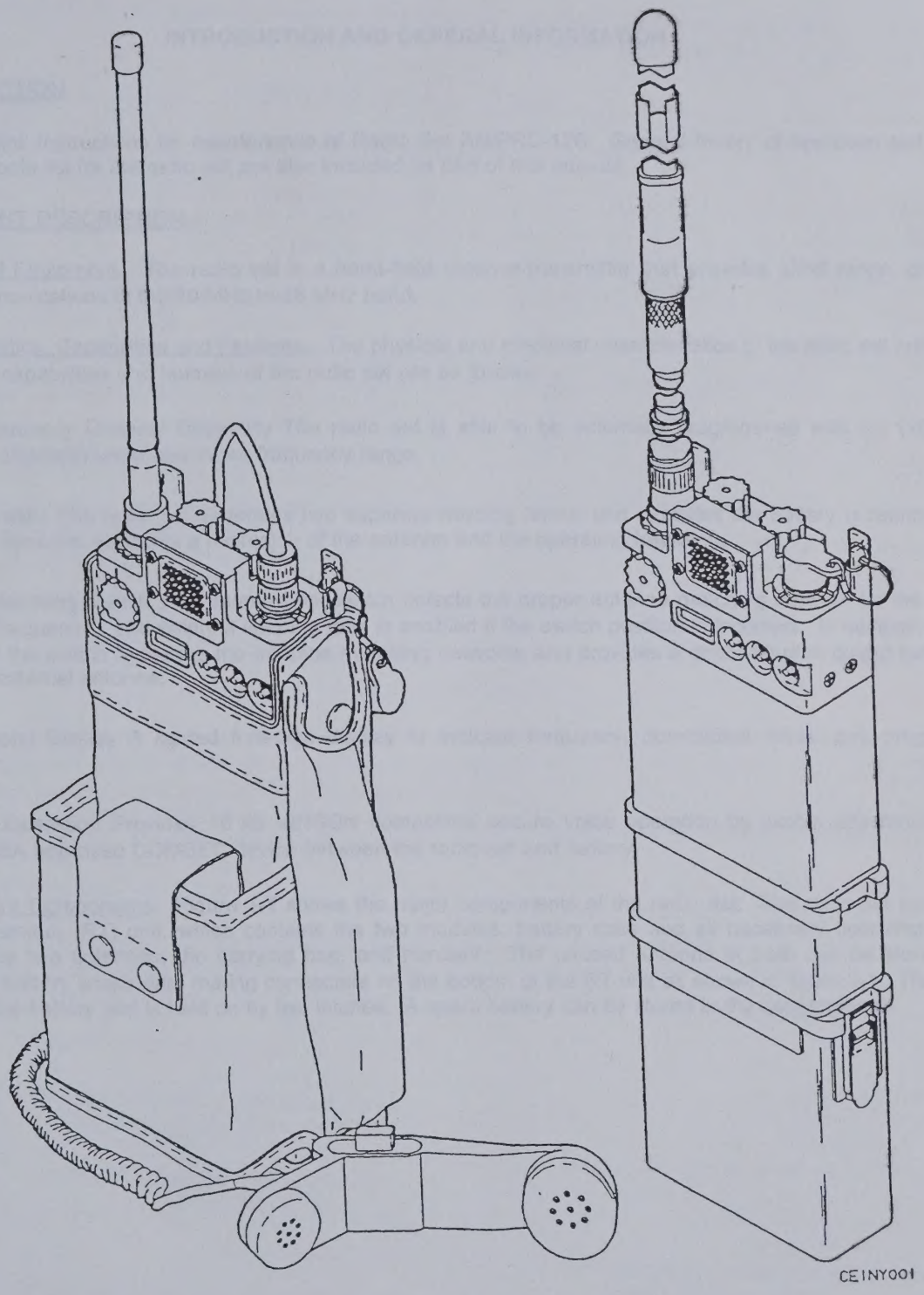


Figure 1-1. Radio Set AN/PRC-126

SECTION I

INTRODUCTION AND GENERAL INFORMATION

1-1 INTRODUCTION.

This manual contains instructions for maintenance of Radio Set AN/PRC-126. General theory of operation and a repair parts and special tools list for the radio set are also included as part of this manual.

1-2 EQUIPMENT DESCRIPTION.

1-2.1 Purpose of Equipment. The radio set is a hand-held receiver-transmitter that provides short range, ground-to-ground voice communications in the 30 MHz to 88 MHz band.

1-2.2 Characteristics, Capabilities and Features. The physical and electrical characteristics of the radio set are given in table 1-1. Special capabilities and features of the radio set are as follows:

a. Preset Frequency Channel Capability The radio set is able to be externally programmed with ten (10) preset frequency channels anywhere in the frequency range.

b. Warning Tones The radio set generates two separate warning tones; one indicates the battery is nearing its end of life and the other indicates a mismatch of the antenna and the operating frequency.

c. Antenna Matching Switch This thumbwheel switch selects the proper antenna matching network for the selected operating frequency. The antenna warning tone is enabled if the switch position is incorrect. In addition, the "50" position of the switch bypasses the antenna matching networks and provides a direct 50 ohm output for test use or any 50 external antenna.

d. Liquid Crystal Display A lighted five-digit display to indicate frequency, operational mode, and programming information.

e. COMSEC Operation Provides 16 kb VINSON compatible secure voice operation by simple attachment of the KYV-2A NSA approved COMSEC device between the radio set and battery.

1-2.3 List of Major Components. Figure 1-1 shows the major components of the radio set. The radio set consists of: the Receiver Transmitter (RT) unit, which contains the two modules, battery case and all necessary operating controls and connectors; the two antennas, the carrying bag, and handset. The unused antenna or both can be stored in the carrying bag. The battery snaps onto mating connectors on the bottom of the RT unit as shown in figure 2-1. The battery case then retains the battery and is held on by two latches. A spare battery can be stored in the carrying bag.

1-3 WARRANTY INFORMATION

The AN/PRC-126 Radio Set is warranted by Magnavox Government and Industrial Electronics Company for 24 months after shipment or 90 days after deployment, whichever comes first.

Table 1-1. Table of Specifications

GENERAL CHARACTERISTICS	
Frequency range	30.000 MHz - 87.975 MHz
Available channels	2320 in 25 kHz increments
Minimum Channel spacing	25 kHz
Preset channels	10
Modulation	Frequency modulation (fm)
Operating temperature range	-40°F to +131°F (-40°C to +55°C)
Moisture resistance	Watertight to depth of three feet
Weight (battery, antenna included)	50 oz. (1.42 kg)
Size	9.97 in (253.2 mm) x 3.78 in (96.0 mm) x 1.52 in (38.6 mm)
Low battery tone	Four 400 Hz beeps at six second intervals when battery voltage drops below preset level
Antenna mismatch tone	1000 Hz tone at 1 second intervals when selected frequency and ANT match switch position do not agree
Communications range-long antenna	3000 meters
Communications range-short antenna	500 meters
TRANSMITTER CHARACTERISTICS	
Power output	1 watt
Frequency control	Built-in synthesizer
Frequency stability	±25 ppm at 88 MHz.
Spurious and harmonics radiation	50 dB below of carrier level (2nd harmonic 40 dB)
Modulation deviation	8 kHz, limited at 10 kHz
Squelch tone	148 - 152 Hz, 2.5 - 3.5 kHz deviation
RECEIVER CHARACTERISTICS	
Adjacent channel rejection	-60 dB
Image rejection	-40 dB
Sensitivity	0.3 microvolts for 10 dB SINAD*
Squelch sensitivity	0.3 microvolts
Selectivity, 6 dB down	bandwidth greater than *13 kHz
60 dB down	bandwidth less than *50 kHz
Response to spurious signals	-60 dB
Audio output	less than 10 percent distortion
	at 100 milliwatts

*SINAD = $\frac{\text{Signal + Noise + Distortion}}{\text{Noise + Distortion}}$

SECTION II

PREPARATION FOR USE AND INSTALLATION

2-1 INTRODUCTION.

This section contains: instructions to prepare the radio set for use, installation instructions and instructions to prepare the radio set for storage or shipment.

2-2 UNPACKING AND INSPECTION.

This radio set was carefully inspected both mechanically and electrically before shipment. It should be physically free of mars or scratches and in perfect electrical order. Upon receipt, inspect the radio set as follows:

a. During unpacking, inspect the radio set for physical damage that may have occurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancies (ROD).

b. Check the radio and supplied accessories against the packing slip to ensure the shipment is complete.

c. Test the electrical performance of the radio set using the procedures outlined in Section V of this manual.

2-3 PREPARATION FOR USE.

Perform the following installation procedures as required to prepare the radio set for use.

2-3.1 Antenna Installation. Install the antenna on the radio set ANT connector by turning it fully clockwise (finger tighten only).

2-3.2 Handset Installation. To operate the radio set with a standard handset, line up the keyway (groove) of the handset connector with the keyway of the AUDIO connector and press down firmly. Lock the connector by turning it fully clockwise. When this is done, the internal SPKR/MIC is disconnected.

2-3.3 Battery Installation. To install a battery in the radio set, refer to figure 2-1 and perform the following steps:

WARNING

A lithium-sulfur dioxide (Li-SO_2) battery used with the AN/PRC-126 contains pressurized sulfur dioxide (SO_2) gas. The gas is toxic, and the battery MUST NOT be abused in any way which may cause the battery to rupture.

WARNING

DO NOT heat, short circuit, crush, puncture, mutilate, or disassemble batteries.

WARNING

DO NOT USE any battery which shows signs of damage, such as bulging, swelling disfigurement, brown liquid in the plastic wrap, a swollen plastic wrap, etc.

WARNING

DO NOT test Li-SO_2 batteries for capacity.

WARNING

DO NOT recharge Li-SO_2 batteries.

WARNING

DO NOT use water to extinguish Li-SO_2 battery fires if a Shock hazard exists due to high voltage electrical equipment in the immediate vicinity (i.e., greater than 30 volts, alternating current (ac) or direct current (dc)).

WARNING

If the battery compartment becomes hot to the touch, if you hear a hissing sound (i.e., battery venting), or smell irritating sulfur dioxide gas, IMMEDIATELY Turn Off the equipment. Remove the equipment to a well ventilated area or leave the area.

WARNING

DO NOT use a Halon type fire extinguisher on a lithium battery fire.

WARNING

In the event of a fire, near a lithium battery(ies), rapid cooling of the battery(ies) is important. Use a carbon dioxide (CO_2) extinguisher. Control of the equipment fire, and cooling, may prevent the battery from venting and potentially exposing lithium metal. In the event that lithium metal becomes involved in fire, the use of a graphite based Class D fire extinguisher is recommended, such as Lith-X or MET-L-X.

WARNING

DO NOT store lithium batteries with other hazardous materials and keep them away from open flame or heat.

CAUTION
DO NOT store batteries in unused equipment for more than 30 days.

a. Unfasten latches on battery case; remove battery case and old battery (if installed) (Handle case carefully as damaged case will not seal properly). Refer to Property Disposal Officer for instructions on disposal of old batteries

CAUTION
Ensure the Secure Voice Module (SVM) shorting plug (located next to the battery terminal connector in the RT unit) is Installed and in good condition. The radio set will not work unless the shorting plug or an SVM Is installed.

b. Apply a thin coating of silicone grease to the rubber seal on bottom of RT. Apply a thin coat of silicone grease to seal between 'Module Cover' and 'Frame and Panel'. Apply a thin coating of silicone grease to the four 'O-rings' located underneath the four screws on the sides of the Receiver-Transmitter (see figure 2-1).

c. Plug battery into mating connector on RT unit.

d. Replace battery case and secure with two latches.

2.3 4 Secure Voice Module Installation. Secure voice operation may be utilized on the radio set by connecting the SVM to the bottom of the RT unit. To Install the SVM to the radio set, refer to figure 2-1 and perform the following steps:

a. Unfasten latches on battery case and remove the battery case and battery.

b. Unplug the SVM shorting plug and store in cavity provided in bottom of module case.

c. Apply a thin coat of silicone grease when needed to the rubber seal on bottom of RT.

d. Install SVM onto bottom of RT unit, ensuring connectors are properly aligned. Secure SVM to RT unit with two screws on bottom of SVM.

e. Apply a thin coat of silicone grease to the rubber seal on bottom of SVM.

f. Plug battery into mating connector on bottom of SVM.

g. Replace battery case and secure with two latches.

2-4 PREPARATION FOR RESHIPMENT.

2-4.1 Repackaging for Storage or Shipment. Refer to figure 2-2 to prepare the radio set for preferred storage or shipment. Markings shall be applied in specified area (item 8 figure 2-2) and in accordance with requirements When items are to be stored for prolonged periods. bagged desiccant and a humidity indicator card (items 2 and 3, figure 2-2) can be included for moisture protection

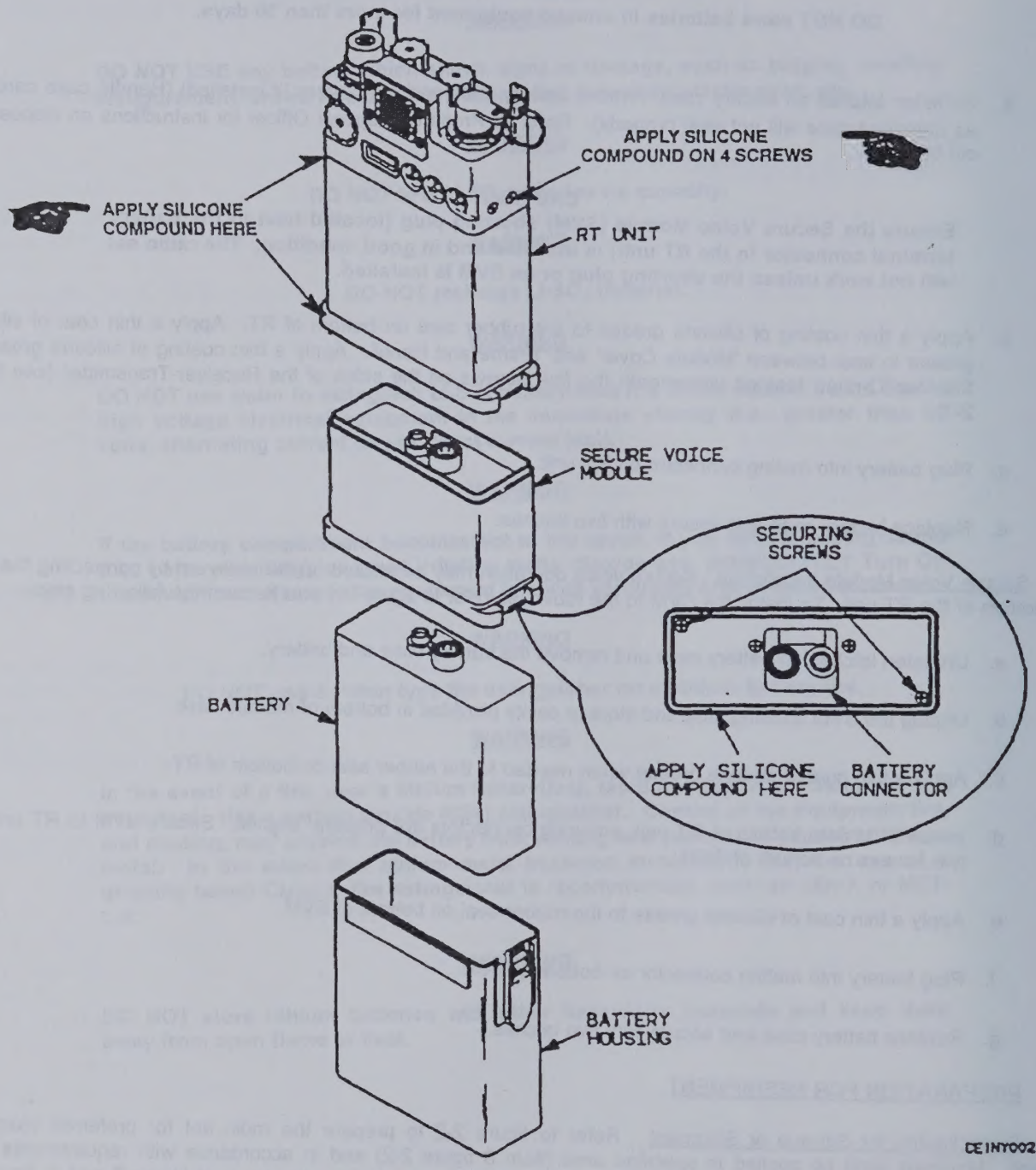
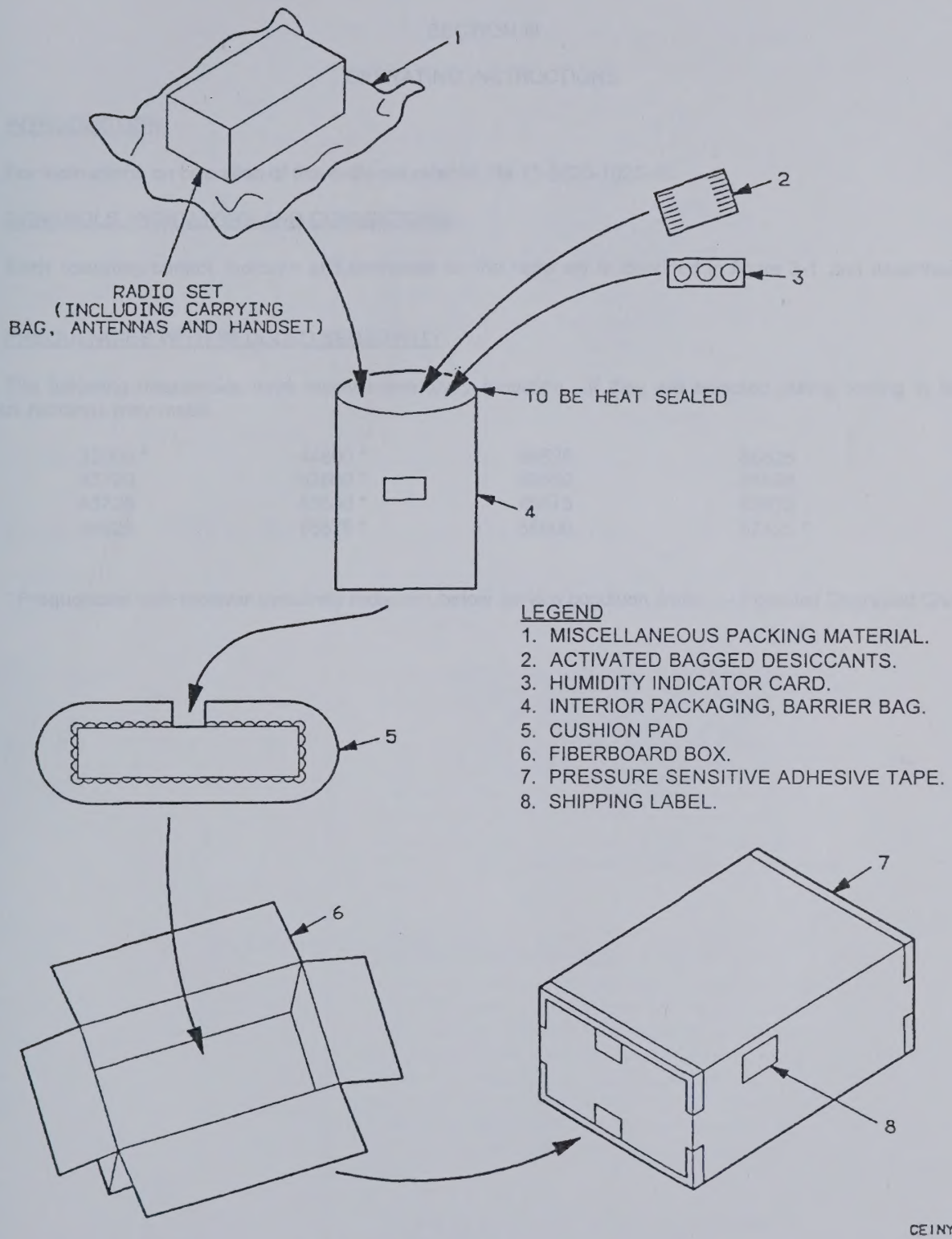


Figure 2-1. Battery/Secure Voice Module Installation



LEGEND

1. MISCELLANEOUS PACKING MATERIAL.
2. ACTIVATED BAGGED DESICCANTS.
3. HUMIDITY INDICATOR CARD.
4. INTERIOR PACKAGING, BARRIER BAG.
5. CUSHION PAD
6. FIBERBOARD BOX.
7. PRESSURE SENSITIVE ADHESIVE TAPE.
8. SHIPPING LABEL.

Figure 2-2. Radio Set Packaging Diagram

SECTION III

OPERATING INSTRUCTIONS

3-1 INTRODUCTION.

For instructions on operation of this radio set refer to TM 11-5820-1025-10.

3-2 CONTROLS, INDICATORS AND CONNECTORS.

Each operating control, indicator and connector on the radio set is identified in figure 3-1 and described in table 3-1.

3-3 FREQUENCIES WITH REDUCED SENSITIVITY.

The following frequencies have receiver sensitivity reduction. If they are selected during testing in Section V, erroneous readings may result.

32000 *	44800 *	85525	85625
43700	57600 *	85550	85650
43725	65550 *	85575	85675
44625	65575 *	85600	87425 *

* Frequencies with receiver sensitivity reduction below service condition limits. -- Potential Degraded Channels.

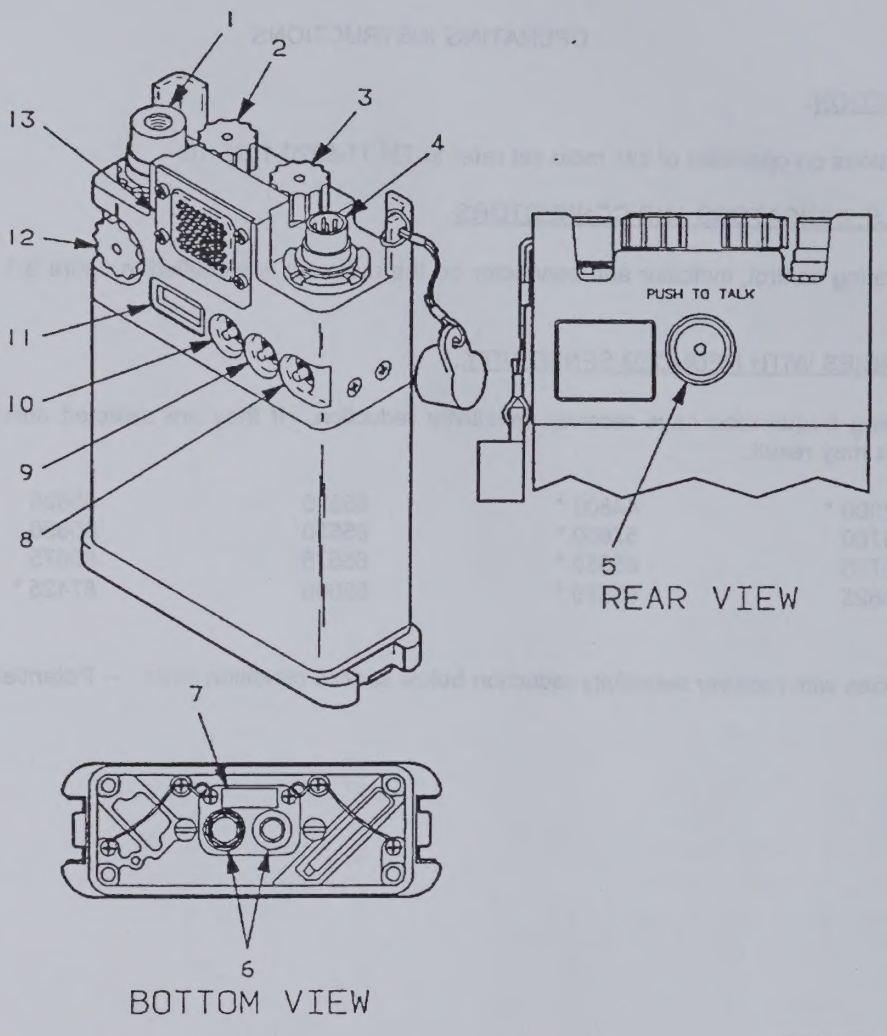


Figure 3-1. Radio Set Controls, Indicators and Connectors

Table 3-1. Description of Radio Set Controls, Indicators and Connectors

Name	Index no.	Description
ANT connector (J4)	1	Connects antenna to radio set.
CHAN selector switch (S3)	2	Selects one of 10 preset operating channels. In programming mode, selects channel to be loaded.
VOL/OFF switch (S2)	3	Turns radio set on (clockwise) or off (full counterclockwise). Adjusts level of sound heard in radio set or handset speaker.
AUDIO connector (J5)	4	Standard U-183/U style connector for use with external handset, or frequency transfer cable.
PUSH TO TALK switch (S1)	5	Enables radio set to transmit when pressed.
Battery connectors	6	Connects battery to radio set.
SVM connector (J1) and shorting plug (P1)	7	Provides interconnection between SVM and radio set. Shorting plug allows radio set to operate when SVM is not installed.
SQ DSBL switch (S4)	8	Pushbutton used to disable radio set receiver squelch circuit (noise heard in speaker).
INCR switch (S9)	9	Pushbutton used during programming mode to set value of each digit in display. This switch is also used when not in the programming mode to momentarily disable the 150 Hz squelch tone modulation while in transmit mode. This mode is used only during maintenance checkout of the radio set.
SET switch (S8)	10	Pushbutton used to initiate the programming mode, step through digits in display and load new frequency information. Programming mode is activated if SET button is pushed within 10 seconds of radio turn on. Programming mode is deactivated 10 seconds after channel is programmed. If programming of additional channels starts within 10 seconds of completion of previous channel's programming, radio does not need to be turned off and on to retain activation of the programming mode. This switch is also used at night to momentarily light the display during normal (non-programming) operation.

Table 3-1. Description of Radio Set Controls, Indicators and Connectors-CONT

Name	Index no.	Description
FREQ display (DS1)	11	Five-digit liquid crystal display (LCD) used to indicate the selected preset channel frequency. Display may be lighted during normal (non programming mode by pushing the SET button. During the programming mode the display is continuously lit. Other indications are as follows: "LOAD" - In program mode, indicates data previously displayed is now loaded in the selected preset channel memory location.
ANT match switch (S5)	12	Selects proper antenna matching network for the operating frequency selected or bypasses antenna matching networks to provide a direct 50 ohm output. Warning tone sounds in speaker if match is incorrect. Corresponding frequencies for each switch position are as follows: A = 30.000 - 35.975 B = 36.000 - 45.975 C = 46.000 - 53.975 D = 54.000 - 63.975 E = 64.000 - 87.975 50 = 50 ohms output **NOTE** **A DC path to ground of 2000 ohms or less must be provided between the antenna terminal and ground when transmitting or receiving in the 50 ohm output position. If the antenna does not provide this DC path, an external DC path must be provided with an RF impedance greater than 1000 ohms.**
Speaker/Microphone	13	Functions as built-in speaker (receive) and microphone (transmit) when external handset is not connected.

3-4 UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

To ensure the radio set is always ready for operation, it must be inspected so that defects may be discovered and corrected before they result in serious damage or failure. Table 3-2 describes the operator's preventive maintenance checks for the radio set and includes what items should be checked, how to check them and at what intervals, (W) weekly or (M) monthly, the checks are to be made. Routine checks like cleaning, checking for frayed cables, stowing items not in use, covering unused receptacles and checking for loose nuts and bolts are not listed as checks. They are things that you should do anytime you see they must be done.

Table 3-2. Unit Preventive Maintenance Checks and Services

W - Weekly M - Monthly

Interval		Item to be inspected	Procedures check for and have repaired or adjusted as necessary	Equipment is not ready/ available if:
W	M			
*	*	Antenna	Check that antenna is not broken and is mated with ANT connector on radio set. ANT match switch is in proper position	Antenna broken, antenna missing, antenna will not mate with the ANT connector.
*		Operating Controls	Check that control knobs are not missing or loose on shaft and that they operate smoothly without binding.	Operating control knobs are missing or binding.
*		Handset	Check that handset connector mates properly with AUDIO connector on radio set. Check condition of handset.	Handset connector will not mate with AUDIO connector. Handset case cracked or frayed cable.
*	*	Batteries	With radio set turned on - check for low battery alarm. not available.	Battery alarm sounds and replacement battery is
*	*	Display	With radio set turned on - check for frequency on FREQ display.	Frequency not present on FREQ display.
*	*	Operation	With radio set turned on - set radio set to an assigned channel, communicate with a distant radio set or station.	You can not make proper contact with distant station or radio set.
	*	Radio Set	Check the following for damage: case, fasteners, knobs, connectors, display.	Damage to items that may cause the radio set not to perform properly.

SECTION IV

THEORY OF OPERATION

4-1 INTRODUCTION.

This section contains the basic principles of circuit operation for the radio set. The information is first discussed in a simplified block diagram description (figures 4-1, 4-2) and then in a detailed block diagram description (figures 4-3, 4-4, and 4-5).

4-2 OVERALL DESCRIPTION.

The radio set consists of a frame and panel assembly, two plug-in modules and the battery case. The panel assembly contains the connectors, switches, speaker/mic and frequency display necessary for operation of the radio set. The two plug-in modules contain all the circuitry necessary for channel frequency programming, frequency synthesis, receive operation and transmit operation. These functions are further described below.

4-3 BLOCK DIAGRAM DESCRIPTION.

4-3.1 Channel Frequency Programming. The radio set provides for operator selection of ten independent preset channels in the 30 to 88 MHz vhf band. The selected channel frequency is displayed on the liquid crystal (LCD) display. Manual channel frequency programming is accomplished with the SET, INCrement switches, the CHAN switch, and the PUSH TO TALK switch. A microcontroller data processor and a nonvolatile programmable memory (EEPROM) are used to provide the independent preset channels capability.

4-3.2 Frequency Synthesizer. The frequency synthesizer section of the radio set generates a stable injection frequency for the transmit and receive mixers. The synthesizer frequency range is from 51.4 MHz to 109.4 MHz in 25 kHz increments. The required frequency accuracy and stability is achieved by phaselocking a variable frequency (51.4 to 109.4 MHz) voltage controlled oscillator (VCO) to a fixed frequency standard (6.4 MHz), crystal-controlled reference oscillator. The channel frequency of the synthesizer is determined by the digital data from the microcontroller and preset channel memory.

4-3.3 Receiver Operation (fig. 4-1). When the radio set is turned on (VOL/OFF switch is turned CW), the unit is in the receive mode (squelch is on, no receiver noise present). Signals entering the antenna are routed through the antenna matching networks and harmonic filters to the converter stage (RF amplifiers and first mixer). The frequency synthesizer provides the injection frequency for the first mixer. The output of the mixer is the difference product of 21.4 MHz (first IF) obtained by mixing the incoming signal (30 to 88 MHz) with the 51.4 to 109.4 MHz injection frequency. A 21.4 MHz IF amplifier and a crystal filter provide a channel bandwidth of *15 kHz and greater than 40 dB attenuation to adjacent channels.

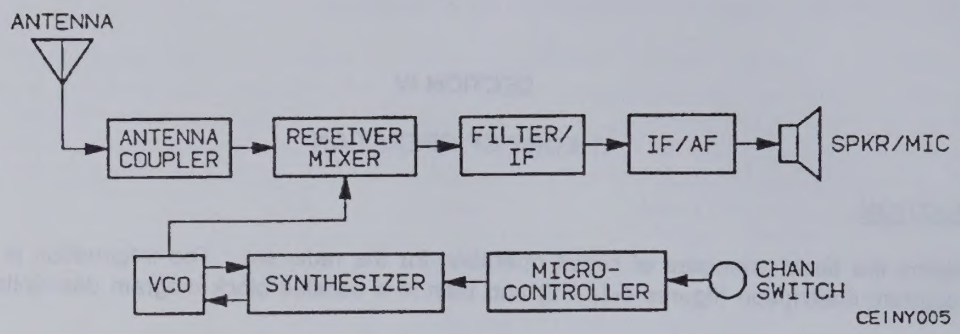


Figure 4-1. Receiver Operation, Simplified Block Diagram

The 21.4 MHz signal is amplified and converted to 455 kHz (second IF) in the filter/IF section. The second IF Filter provides over 40 dB of additional selectivity. The 455 kHz signal is amplified, limited, and applied to an FM quadrature detector for demodulation. The audio output from the detector is filtered and amplified in the AF section and routed to the internal speaker/microphone or external handset.

4-3.4 Transmitter Operation (Fig. 4-2). When the radio set is in the transmit mode (unit turned on and PUSH TO TALK switch depressed), the speaker/microphone is used as a microphone to apply a voice signal to the modulation circuits. The speech signal is frequency modulated on a 21.4 MHz intermediate carrier signal (deviation oscillator) and applied to the transmit mixer along with the frequency synthesizer signal (51.4 to 109.4 MHz). The difference output signal from the mixer (30 to 88 MHz) is selected, filtered, and amplified by one of the two RF amplifiers and applied to the power amplifiers. The frequency modulation on the 21.4 MHz signal is transferred to the 30 to 88 MHz carrier signal by the mixing process. The power amplifiers increase the FM carrier signal to one watt nominal. The signal is then filtered and impedance matched by the antenna matching network to the antenna for radiation.

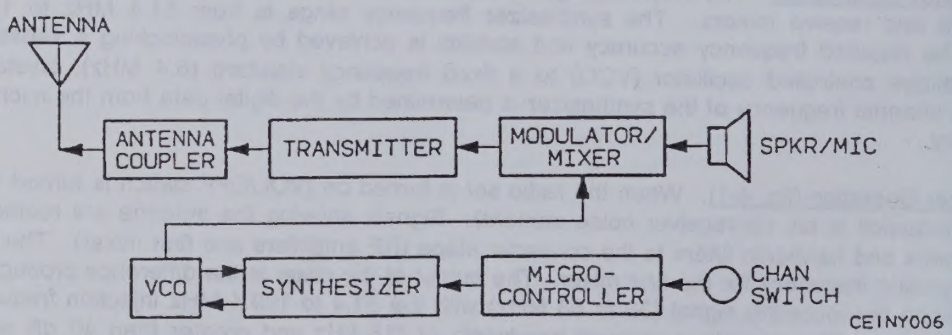


Figure 4-2. Transmitter Operation, Simplified Block Diagram

4-4 DETAILED CIRCUIT DESCRIPTION.

This section is limited to description of the modules and their interfacing with each other.

4-4.1 Circuit Functioning. Circuit functioning of the radio set (see figures 4-3 and 4-4) can be broken down into circuits that perform separate functions (receive and transmit) and circuits that are used for both functions (synthesizer, voltage controlled oscillator, voltage-tuned RF stages, and RF filter/matching networks). Special functions are also discussed. Special functions include the battery saver, 150 Hz squelch tone, low-battery warning and antenna warning circuits. The circuits of the two electronics modules are interconnected with each other and the external features of the radio set via a frame and panel assembly (see figure 4-5).

4-4.2 Receive Operation. The receiver is packaged in both modules. The RF/IF module (figure 4-3) contains the RF, IF, FM detector, squelch, and wideband audio circuits. The SYNTH/AF module (figure 4-4) contains the narrowband audio circuits which include the speech filter, squelch gate, speaker/headphone amplifier, speaker mute. Receiver functions are discussed in the following paragraphs.

4-4.2.1 RF Section. The RF section includes the antenna matching networks, lowpass harmonic filters, diode switches, varactor tuned RF amplifiers, and the receiver first mixer.

4-4.2.1.1 Antenna Matching Networks. These networks provide optimum impedance matching and power transfer between the radio set antenna and the receiver or transmitter. The networks are divided into five operating bands of 30.000 35.975 (A), 36.000 45.975 (B), 46.000 53.975 (C), 54.000 63.975 (D), 64.000 87.975 (E) and are manually selected with the ANT match switch. A sixth position on the ANT match switch (50) is provided which bypasses all matching networks and allows for direct 50 ohm interface between the receiver or transmitter and an external 50 load. The 50 ohm input/output position is also used when troubleshooting or making performance measurements using bench test equipment and the test set. A DC path to ground of 2000 ohms or less must be provided between the antenna terminal and ground when transmitting or receiving in the 50 ohm output position. If the antenna does not provide this DC path, an external DC path must be provided with an RF impedance greater than 1000 ohms. The microcontroller monitors the position of this switch and compares its position with the selected frequency. If the switch is set to the wrong range, the microcontroller generates a warning tone that is heard in the speaker. The switch is then adjusted until the warning tone is disabled. The microcontroller also prevents the radio set from transmitting during an antenna mismatch.

4-4.2.1.2 Low-pass Harmonic Filters. These filters are used in both receive and transmit modes of operation and are divided into two operating bands (LO band 30-51 MHz and HI band 51-88 MHz). The appropriate filter network, depending on the operating frequency, is selected by the band control signals from the microcontroller. In the receive mode of operation, these filters provide attenuation to out-of-band signals which could cause interference. In the transmit mode of operation, the filters provide attenuation to the harmonic frequencies of the transmitter carrier frequency.

4-4.2.1.3 Diode Switches. Diode switches are used to couple RF signals from the antenna to the receiver RF amplifier, to couple the synthesizer VCO injection signal to the receiver first mixer, to couple RF signals from the transmit mixer to the RF amplifiers and antenna, to select one of two antenna harmonic filter bands,

to select one of two synthesizer VCO operating bands, to select one of two RF amplifier operating bands. These diodes are turned on by forward-bias current from the receive B+, chopped B+, transmit B+, HI band, LO band control lines depending on the operating frequency and mode.

4-4.2.1.4 RF Amplifier. This amplifier section consists of two bandswitched, varactor tuned RF amplifiers. The low band amplifier covers the frequency range from 30 MHz to 51 MHz and the high band amplifier covers the frequency range from 51 MHz to 88 MHz. The bandswitch and tuning voltages for both amplifiers are generated automatically by the synthesizer when a new frequency selection is made. The tuning voltage range is 1.8 Vdc to 9.5 Vdc. The gain of each amplifier is nominally 15 dB. The output from the RF amplifier is routed to the receiver first mixer. This amplifier section is also used in the transmit mode of operation to provide selectivity to desired transmit mixer products. Transfer of operation is accomplished with diode switches.

4-4.2.1.5 First IF. This circuit consists of a passive, double-balanced, diode mixer, an IF amplifier and a 21.4 MHz crystal filter. The receiver first mixer translates the incoming, amplified RF signal to the first intermediate frequency (IF). This function is accomplished by mixing the RF signal with the synthesizer VCO signal. The synthesizer VCO frequency range of 51.4 MHz to 109.4 MHz provides high side injection to the first mixer (21.4 MHz above the RF signal). The first IF amplifier and a crystal filter select the difference product of 21.4 MHz and reject all other mixer products. The first mixer and IF amplifier provide a nominal conversion gain of 6 dB from RF to IF. The crystal filter provides a -6 dB pass bandwidth of 30 kHz and a -40 dB stop bandwidth of 100 kHz. The filter insertion loss is 2 dB. The total receiver gain to the input of the second IF section is 23 dB nominal.

4-4.2.2 Second IF. The second IF section consists of the second mixer, 21.855 MHz local oscillator, 455 kHz second IF amplifier, FM detector, and squelch functions. The active portions of these functions are contained within one integrated circuit.

4-4.2.2.1 Second Mixer. The receiver second mixer translates the 21.4 MHz IF to a second IF of 455 kHz by mixing the 21.4 MHz signal with a 21.855 MHz local oscillator and selecting the difference product of 455 kHz. A bandpass filter following the mixer rejects all products except the 455 kHz product. The wideband bandpass filter provides a *15 kHz second IF bandwidth.

4-4.2.2.2 21.855 MHz Local Oscillator. This crystal controlled oscillator provides the local oscillator injection signal for the second mixer.

4-4.2.2.3 455 kHz IF Amplifier. This amplifier consists of a five-stage limiter and provides most of the overall 100 dB gain of the IF section. The limiting function improves the sensitivity and interference rejection capability of the receiver.

4-4.2.2.4 FM Detector. The limiter amplifier drives an FM quadrature detector which converts the modulation information on the frequency modulated IF signal to a wideband audio signal. The bandwidth of the audio output signal is 12 kHz. This

wideband output is used for processing 16 kb/s secure voice data in the SVM when it is attached to the radio set. Otherwise in normal operation, a shorting plug is inserted into the SVM connector which routes the wideband audio signal directly to the narrowband audio circuits in the SYNTH/AF module.

4-4.2.2.5 Squelch Function. The squelch function mutes or quiets the audio output of the receiver when a signal is not being received. This circuit samples the noise above the standard speech band (3 kHz) in the 8 kHz range and converts it to a DC control signal. When no carrier is present the noise level is high and the DC control signal will be high. When a carrier is present the noise level is reduced which reduces the DC control level. The DC signal drives a threshold comparator which provides a two state output; on or off. This output is routed to the SYNTH/ AF module where it is used to control the operation of the microcontroller and the squelch gate for the receiver audio output. The RF input level at which the squelch is disabled (or turned off) is presettable by an internal adjustment in the RF/IF module. The squelch may also be momentarily disabled by pressing the SQ DSBL button on the radio set panel.

4-4.2.3 Narrowband AF Section. -These functions are contained in the SYNTH/AF module and include the speech filter, speaker/handset amplifier, squelch-gate, and speaker mute circuits.

4-4.2.3.1 Speech Filter. In normal non-secure speech operation, the information bandwidth is 300 Hz to 3 kHz. The speech filter passes this frequency band and attenuates frequencies above and below it. Of special importance is the attenuation of the wideband audio noise above 3 kHz which improves the receiver output signal-to-noise ratio (S/N) by 6 dB. The output from the speech filter is routed to the audio power amplifier.

4-4.2.3.2 Speaker/Handset Amplifier. This audio power amplifier provides over 26 dB of gain which Increases the audio output level to 100 milliwatts for the internal speaker (47 ohms) and 7 milliwatts for the handset (600 ohms).

4-4.2.3.3 Squelch Control. This circuit controls (or gates) the receiver audio output by switching DC power off to the audio amplifier when no RF signal is present or switching DC power on when an RF signal is present. This feature not only quiets the receiver output but also reduces power consumption. The squelch gatE is controlled by the microcontroller. The microcontroller receives its control signal from the squelch circuits in the RF/IF module (squelch mute) or from the SQ DSBL pushbutton (squelch disable).

4-4.2.3.4 Speaker Mute. This circuit automatically quiets the internal speaker when a handset is connected to the audio connector on the radio set. When the handset is removed the internal speaker is automatically enabled. The DC resistance of the handset earpiece, when connected, changes the DC bias voltage on a series FET switch which turns the FET off and opens the audio line to the internal speaker.

4-4.3 Transmit Operation. The transmitter is packaged in both modules. The RF/IF module contains the RF and transmit mixer functions. The SYNTH/AF module contains the AF and transmit IF functions.

4-4.3.1 AF Section. Included in this section are the microphone speech amplifier/limiter, 150 Hz amplifier and filter, and the speech filter.

4-4.3.1.1 Speech Amplifier/Limiter. This circuit linearly amplifies the low level microphone signal to a nominal level of 6V p-p while providing a symmetrically limited output of 8V p-p for higher than normal speech level. The limiter function prevents overmodulation by restricting the maximum carrier frequency deviation to a specified level. The amplifier provides a gain of 70 dB.

4-4.3.1.2 150 Hz Amplifier. This circuit amplifies the 150 Hz square wave tone generated by the microcontroller to a level of 5V p-p. An RC low-pass filter prior to the amplifier shapes the 150 Hz tone to a sawtooth waveform. The 150 Hz tone is generated only in the transmit mode and is used to trigger the tone-squelch circuit in the PRC-77 and VRC-12 radios. The 150 Hz tone is disabled (J1-9) when an SVM is attached to the radio set. The 150 Hz tone can also be temporarily disabled during testing by pushing the INC button on the front panel.

4-4.3.1.3 Speech Filter. The purpose of this circuit is to attenuate the harmonic frequencies generated by the limiter-amplifier in order to minimize the modulation bandwidth of the transmitted signal. The circuit is a unity gain, active low-pass filter with a cutoff (-3 dB) frequency of 3 kHz. The filter also attenuates any high frequency background noise which may be picked up by the microphone. When an SVM is attached to the radio set, the output signal from the Speech Filter (J2-22) is routed to the SVM for speech ciphering. In normal use, without an SVM, the signal is routed through the jumper plug (J1-14 to 1) and back to the 21.4 MHz deviation oscillator in the SYNTH/AF module (J2-18). This normal mode of operation is plain text, nonsecure speech. The SVM mode is cipher text, secure speech.

4-4.3.2 IF Section. This section includes the 8.5 Vdc voltage regulator, 21.4 MHz deviation oscillator, and 21.4 MHz low-pass filter.

4-4.3.2.1 8.5 Vdc Regulator. This regulator provides a stable supply voltage for the deviation oscillator and bias voltage for the varactor-tuned modulation circuits.

4-4.3.2.2 21.4 MHz Deviation Oscillator. The purpose of this circuit is to frequency modulate a 21.4 MHz IF transmit carrier signal with either a cipher signal from the SVM or a plain signal directly from the speech amplifier. This frequency modulation is accomplished by superimposing the cipher or plain signal on a DC bias voltage and applying the combined signal to a varactor diode (voltage variable capacitor). The changing amplitude of the audio signal varies the capacitance of the varactor diode which, in conjunction with other components in the modulation circuit, changes or deviates the oscillator carrier frequency symmetrically on either side of the 21.4 MHz center frequency. The frequency deviation is directly proportional to the positive and negative audio amplitude variations superimposed on the varactor DC bias voltage. An internal potentiometer allows adjustment of the bias voltage which in turn varies the 21.4 MHz carrier center frequency. The normal frequency deviation for plain speech is $\pm$8 kHz with a sine wave audio input amplitude of 5V p-p ($\pm$2.5V p-p on DC bias). The frequency deviation for secure speech is approximately $\pm$5.5 kHz with a ciphered digital input signal. When the input signal to the microphone is louder than normal the limiter-amplifier clips the signal to a constant amplitude to prevent over-modulation of the carrier. An internal variable capacitor adjustment allows the maximum frequency deviation to be set to a level less than $\pm$12 kHz proportional to the amplitude of the limited

speech signal. The nominal setting for this adjustment is ±10 kHz deviation. The nominal frequency deviation for the 150 Hz squelch tone is ±2.5 kHz with a 2V p-p input signal.

4-4.3.2.3 21.4 MHz Low-pass Filter. This filter passes the 21.4 MHz transmit IF carrier signal and attenuates all harmonics by greater than 40 dB in order to minimize unwanted spurious products in the transmit mixer circuit. The 21.4 MHz transmit IF output signal is routed through J2-2 to the transmit mixer in the RF/IF module.

4-4.3.3 RF Section. This section consists of the transmit mixer, varactor-tuned preamplifiers, diode switches, power amplifiers, power control, harmonic filters, and antenna matching circuits.

4-4.3.3.1 Transmit Mixer. This circuit is a passive, double-balanced, diode mixer. The desired output signal from the mixer is the difference product of the 21.4 MHz transmit IF input and the 51.4 to 109.4 MHz synthesizer VCO input. The difference product comprises the frequencies from 30 to 88 MHz. The low band VCO generates the local oscillator frequencies from 51.4 to 72.4 MHz and the resultant low band operating frequencies from 30 to 51 MHz. The high band VCO generates the local oscillator frequencies from 72.4 to 109.4 MHz and the resultant high band operating frequencies from 51 to 88 MHz. The varactor-tuned preamplifiers following the mixer select and amplify the difference product depending on low band or high band operation, respectively.

4-4.3.3.2 Varactor-tuned RF Preamplifiers. These low level RF amplifiers are also used in the receive mode (para. 4-4.2.1.4). Diode switches transfer the receive transmit signals for the respective modes of operation. In the transmit mode, the amplifiers are used to amplify one of the two band products from the transmit mixer. If the operating frequency is in the 30 to 51 MHz range, the low band amplifier is automatically turned on and the high band amplifier is turned off. The opposite switching occurs if the operating frequency is in the 51 to 88 MHz range. Each amplifier has a nominal power gain of 15 dB and provides 50 dB relative attenuation to the transmit mixer image product (other band). The amplifiers are voltage tuned with the synthesizer PLL control voltage tune volts (J2-9). Frequency versus voltage tracking is accomplished with a set of six matched varactor diodes (two for the VCO and two for each RF amp) and series capacitive padders. These tuned circuits warp the tuning curves of the two RF amps such that their tracking error is maintained to within 3 dB maximum. The nominal preamplifier output signal level is 70 mV at the power amplifier input.

4-4.3.3.3 Power Amplifiers. This section consists of three stages of power gain The amplifiers are broadband covering the complete 30 to 88 MHz frequency range in one band with no manual tuning required. The overall power gain is 46 dB with a minimum output power level of one watt. The driver amplifiers have a nominal gain of 28 dB. The final power amplifier has a nominal gain of 15 dB. The power control circuit and the current control potentiometer provide for setting the output to the one watt level at the maximum rated current. The output signal is routed through a diode switch to the harmonic filters.

4-4.3.3.4 Diode Switches. The diode switches transfer the transmitter output signal to the harmonic filters while isolating the receiver input from the transmitter and filters. These switches are controlled by the transmit and chopped B+ lines as determined by the PTT switch position.

4-4.3.3.5 Harmonic Filters. These filters pass the desired transmit carrier frequency while rejecting the harmonics of the carrier. Two filter bands (LO,HI) are necessary to provide the required amount of attenuation to the harmonics. The bands are 30 to 51 MHz and 51 MHz to 88 MHz. Band selection is accomplished by the HI band and LO band control signals from the microcontroller.

4-4.3.3.6 Antenna Matching Networks. This section is divided into five frequency bands and a direct 50 ohm output. Band selection is accomplished manually by setting the ANT match switch to the correct position (A-B-C-D-E-50). These circuits impedance match the antenna to the transmitter to provide maximum radiated power from the antenna. The 50 ohm rf input/output position bypasses the antenna matching networks and provides a direct 50 ohm interface with a power amplifier, test equipment or other antenna systems. A DC path to ground of 2000 ohms or less must be provided between the antenna terminal and ground when transmitting or receiving in the 50 ohm output position. If the antenna does not provide this DC path, an external path must be provided with an RF impedance greater than 1000 ohms.

4-4.4 Frequency Synthesizer Operation. The frequency synthesizer circuits consist of two sections. The phase-lock-loop (PLL) is contained in the SYNTH/AF module except for the voltage-controlled-oscillator (VCO), which is contained in the RF/IF module. The control section is contained in the SYNTH/AF module.

4-4.4.1 PLL Section. The PLL section includes the voltage-controlled-oscillators, buffer amplifier/regulator, ÷40/41 prescaler, frequency synthesizer, reference oscillator, and loop filter. The PLL generates a stable 51.4 to 109.4 MHz injection frequency for the transmit and receive mixers. This stability is accomplished by phase-locking a variable frequency VCO (51.4 to 109.4 MHz) to a fixed frequency reference oscillator (6.4 MHz). Both oscillators are frequency divided to a phase detector frequency of 25 kHz for phase comparison. A DC voltage proportional to phase difference is then generated, filtered, and applied to a voltage variable capacitance (varactor) diode in the VCO circuit. When phase-locked to the reference oscillator, the VCO frequency stability is ±12.5 parts per million (ppm) over the -40°C to +55°C temperature range. The receive mode frequency stability is the same as the VCO stability. However, in the transmit mode, the stability of the deviation oscillator is added to the VCO stability. The resultant transmit frequency stability is specified at ±25 ppm at 88 MHz.

4-4.4.1.1 Voltage Controlled Oscillators. Dual oscillators are tuned with a 1.8 to 9.5 Vdc control voltage (tune volts) generated by the PLL synthesizer loop filter. The LO band or HI band control lines determine which oscillator is turned on or off. The LO band oscillator covers the range from 51.4 MHz to 72.4 MHz. The HI band oscillator covers the range from 72.4 MHz to 109.4 MHz. A varactor diode is used in conjunction with other tuned circuit components to provide the required frequency control.

4-4.4.1.2 Buffer Amplifier/Regulator. This circuit provides a dual function. The buffer amplifier Isolates the VCO from load reflections to minimize VCO noise and spurious signals within the PLL. The regulator provides a stable DC supply voltage for the VCO and the .40/41 prescaler. The nominal output signal level from the buffer amplifier to the transmit and receive mixers is 300 mV. The nominal VCO output signal to the prescaler is 300 mV and is superimposed on the regulated +7.5 Vdc supply voltage to the ÷40/41 prescaler in the SYNTH/AF module (J2-13).

4-4.4.1.3 ÷40/41 Prescaler. This circuit is a frequency divider which divides by 40 or 41 as determined by a control signal generated within the frequency synthesizer. The prescaler, in combination with the divide-by-N counters within the synthesizer, divide the VCO frequency down to 25 kHz for phase comparison.

4-4.4.1.4 Frequency Synthesizer. This circuit consists of additional frequency dividers, a reference oscillator and the phase-frequency detector. The frequency divider ratio (divide-by-N) for the PLL synthesizer is supplied by a serial input data word stored in the 64 x 16 bit electrically erasable programmable read only memory (EEPROM). This data word is a number that, when divided by the incoming, prescaled, VCO frequency, results in a frequency of 25 kHz that is applied to the phase-frequency detector. The EEPROM data is determined during the frequency programming sequence from the microcontroller. This same data is also provided back to the microcontroller for bandswitch control. If the selected frequency is between 30.000 and 50.975 MHz the low band will be activated. If the selected frequency is between 51.000 and 87.975 MHz the high band will be activated.

4-4.4.1.5 Phase-Frequency Detector. A fixed frequency divider (÷256) divides the 6.4 MHz reference oscillator down to 25 kHz for phase comparison in the phase frequency detector. The phase-frequency detector provides two functions. The frequency detector first senses the difference in frequency between the fixed reference 25 kHz signal and the divided-down, variable VCO 25 kHz signal. The frequency detector generates a sweep voltage which pulls the VCO closer to the reference. As the VCO frequency approaches the reference frequency, the phase detector then takes control and generates a DC control voltage which phase-locks the VCO and reference signals. In this phase-locked condition, the stability and accuracy of the VCO frequency is equivalent to the reference oscillator.

4-4.4.1.6 Reference Oscillator. The active circuitry for this oscillator is contained within the frequency synthesizer integrated circuit. The quartz-crystal controlled, reference oscillator generates the PLL frequency standard to which the VCO is phase-locked for frequency stability and accuracy. The room temperature accuracy of the reference oscillator is adjustable. The temperature stability of the oscillator, measured with respect to room temperature accuracy, is ±12.5 ppm over the -40°C to +55°C temperature range. The VCO performance is equivalent when phase-locked to the reference oscillator.

4-4.4.1.7 Loop Filter. The PLL filter provides two functions. The first section is a phase-gain compensation network which stabilizes the phase-lock response parameters of the PLL. The last section is an active low-pass filter which attenuates the phase detector fundamental (25 kHz) and harmonic frequencies. The attenuation provided by this filter reduces the incidental frequency modulation (IFM) on the VCO frequency to less than 100 Hz deviation. The loop filter also provides DC amplification of the phase detector control signal to the 1.8 to 9.5 Vdc range required by the VCO for frequency coverage from 51.4 to 109.4 MHz. The output of the loop filter is the tune volts line (J2-9).

4-4.4.2 Control Section. The control section includes the microcontroller, EEPROM and the external operator controls. This section provides digital data conversion and processing of operator selected channel and mode information. This digital

processing is done in parallel format between the microcontroller and external controls and in serial format between the microcontroller and LCD display, frequency synthesizer or EEPROM.

4-4.4.2.1 Microcontroller. The microcontroller is the central processing unit (CPU) that converts frequency selection information to serial digital data. It also distributes serial data and clock to the memory for storage or receives data from the memory for band control. The memory also supplies data to the frequency synthesizer whenever a channel selection is made. The instruction program for the microcontroller is permanently masked into an internal read-only-memory (ROM). A 76.8 kHz crystal-controlled oscillator provides the clock standard for waveform timing and data conversion, processing, and transfer. The microcontroller accepts and generates the following waveforms and control signals:

a. 150 Hz squelch tone output
b. Battery saver chopped B+ output
c. Low-battery/antenna mismatch warning tone outputs
d. Clock output
e. Serial data input/output
f. External program data input/output and repeater transmit PTT output
g. Enable outputs (EEPROM, synthesizer)
h. Low battery detect input
i. HI band output
j. LO band output
k. Receive B+ output
l. Transmit B+ output
m. Squelch mute input
n. PTT input
o. Squelch gate output
p. External load sense input (J7)
q. Squelch disable input
r. Strobe inputs
s. CHAN switch strobe outputs
t. SET/INC switch strobe output
u. ANT switch strobe output
v. Liquid crystal display clock output
w. Liquid crystal display data output
x. Liquid crystal display lighting control output

4-4.4.2.2 Preset Memory. This device is an electrically erasable programmable read only memory (EEPROM) with the capacity to store frequency selection data for twenty channels. All twenty channels (10 receive and 10 transmit) can be randomly programmed to unrelated frequencies and stored for an indefinite period of time. Frequency data recall and frequency changing of the radio set is accomplished immediately when a channel selection is made. The memory is nonvolatile and does not require power to retain data. An enable signal from the microcontroller determines the read/write status of the EEPROM. Programming is accomplished using the procedures given in paragraph 3-4.

4-4.4.2.3 External Operator Controls. The SQ DSBL, SET, INC, ANT and CHAN switches all interface directly with the microcontroller. The microcontroller senses a high or low on the SQ DSBL, SET and INC input lines. If the SQ DSBL

input is low, the microcontroller outputs a high on the squelch gate line to enable the audio amplifier. The PTT switch provides a ground when depressed which tells the microcontroller to go into the transmit mode of operation. The SET and INC switches apply a low to the microcontroller during the programming sequence to select the desired frequency. The ANT and CHAN switches are connected to the microcontroller in a switch matrix configuration. The microcontroller generates strobe pulses on the switch output lines and simultaneously reads the strobe input lines to determine the switch settings.

4-4.5 Special Functions. The special functions generated by the microcontroller circuit are the 150 Hz tone, battery saver timing waveform, battery warning tone and antenna warning tone.

4-4.5.1 150 Hz Tone. This signal is a periodic square wave with an amplitude of 5V peak and a frequency of 150 Hz ±1 Hz. The tone is derived from the 76.8 kHz clock standard and therefore has the same accuracy. The 150 Hz tone is filtered and used to modulate the transmit carrier signal for compatibility with the tone-squelch in the PRC-77 and VRC-12 receivers. This tone is generated during transmit but only in the nonsecure mode.

4-4.5.2 Battery Saver Timing Waveform. These signals are a periodic square wave with amplitudes of 5V peak. The on-time (+5 Vdc) is 54 milliseconds and the off-time is 161 milliseconds when in the secure mode. The timing accuracy is derived from the 76.8 kHz clock standard. This signal is amplified to 15V peak and used as the CHOPPED B+ and HI or LOW Band voltages for duty-cycle portions of the receiver during the squelched-standby mode of operation. The CHOPPED B+ line is also routed to the SVM (J1-3) to accomplish the same purpose in that module. When in the nonsecure mode periodic waveforms of approximately 220 milliseconds are utilized. Various on-times (+5 Vdc) are utilized for the chopped B+, REC B+ and HI-LO control lines. The battery saver signals are generated only in the squelched-standby mode of operation.

4-4.5.3 Battery Warning Tone. This signal consists of a series of four 400 Hz "beeps" every six seconds. In conjunction with a voltage comparator circuit, this tone is used to provide the operator with an audible warning that the battery is nearing end-of-life (EOL). The warning circuit monitors the battery voltage and compares it to a preset, fixed reference voltage. When the battery voltage drops below the preset reference, the comparator switches states and applies a low to the microcontroller. The microcontroller then turns on the speaker/headphone amplifier (squelch gate output) and disables the receiver noise (noise mute output). This allows the tone to be heard by the operator. The tone amplitude is adjustable with the panel VOL (volume) control. The low-battery tone is generated only during the squelched-standby mode and is automatically disabled when a signal is being received or when the radio is used to transmit.

4-4.5.4 Antenna Warning Tone. This signal is generated within the microcontroller and consists of a 1000 Hz tone occurring at 1 second intervals. The microcontroller monitors the ANT switch position and generates the tone whenever its position does not agree with the selected frequency. In addition, the microcontroller senses when a 50 ohm load (LOAD SENSE J3-16) is connected at the ANT connector and then generates the warning tone until the ANT match switch is set to the "50" position (50 ohm output). A DC path to ground of 2000 ohms or less must be provided between the

antenna terminal and ground when transmitting or receiving in the 50 ohm output position. If the antenna does not provide this DC path, an external path must be provided with an RF impedance greater than 1000 ohms. The microcontroller controls the audio circuitry in the same manner as during low battery tone operation. Transmit operation of the radio set is disabled whenever a mismatch is detected.

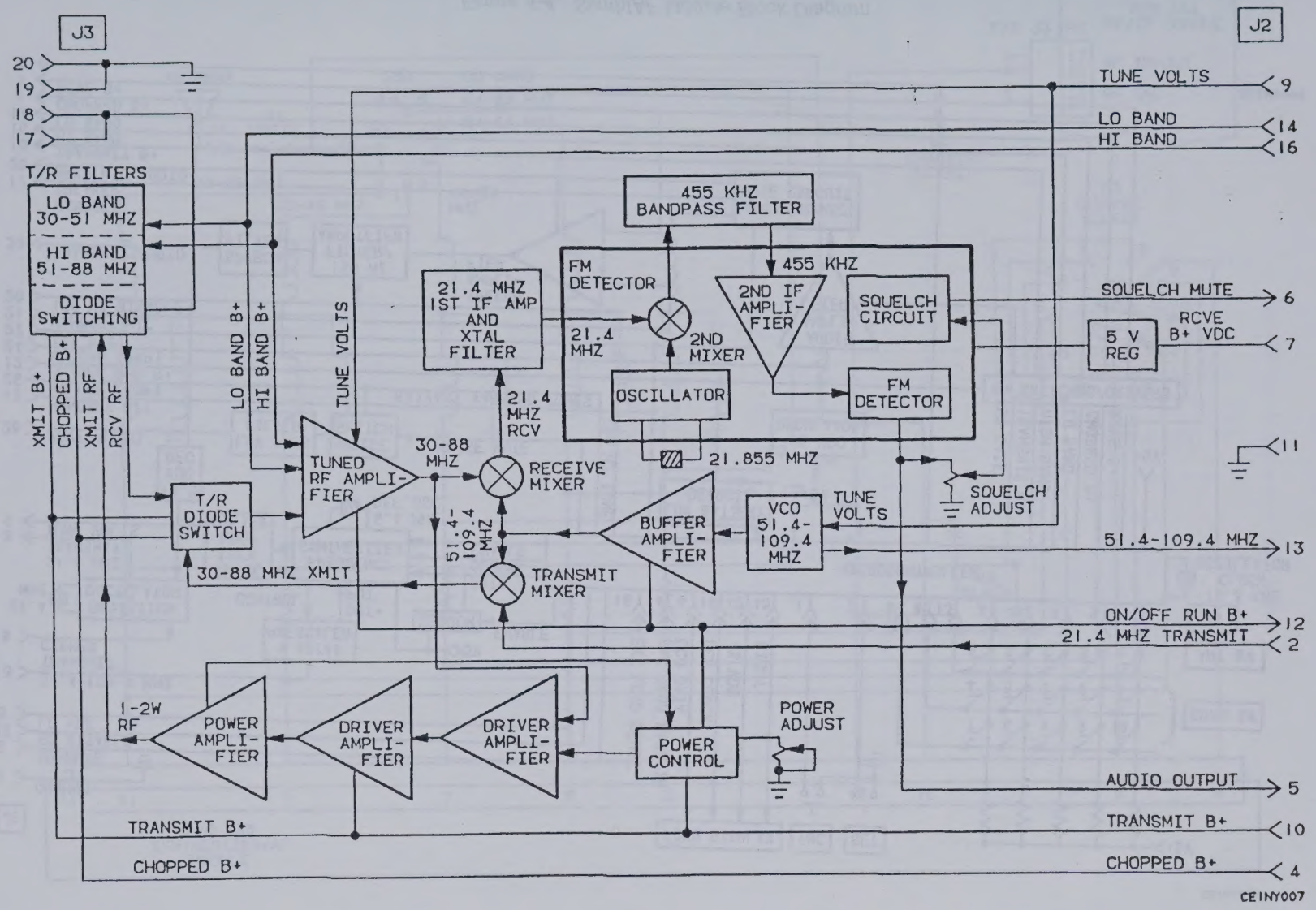


Figure 4-3. RF/IF Module Block Diagram

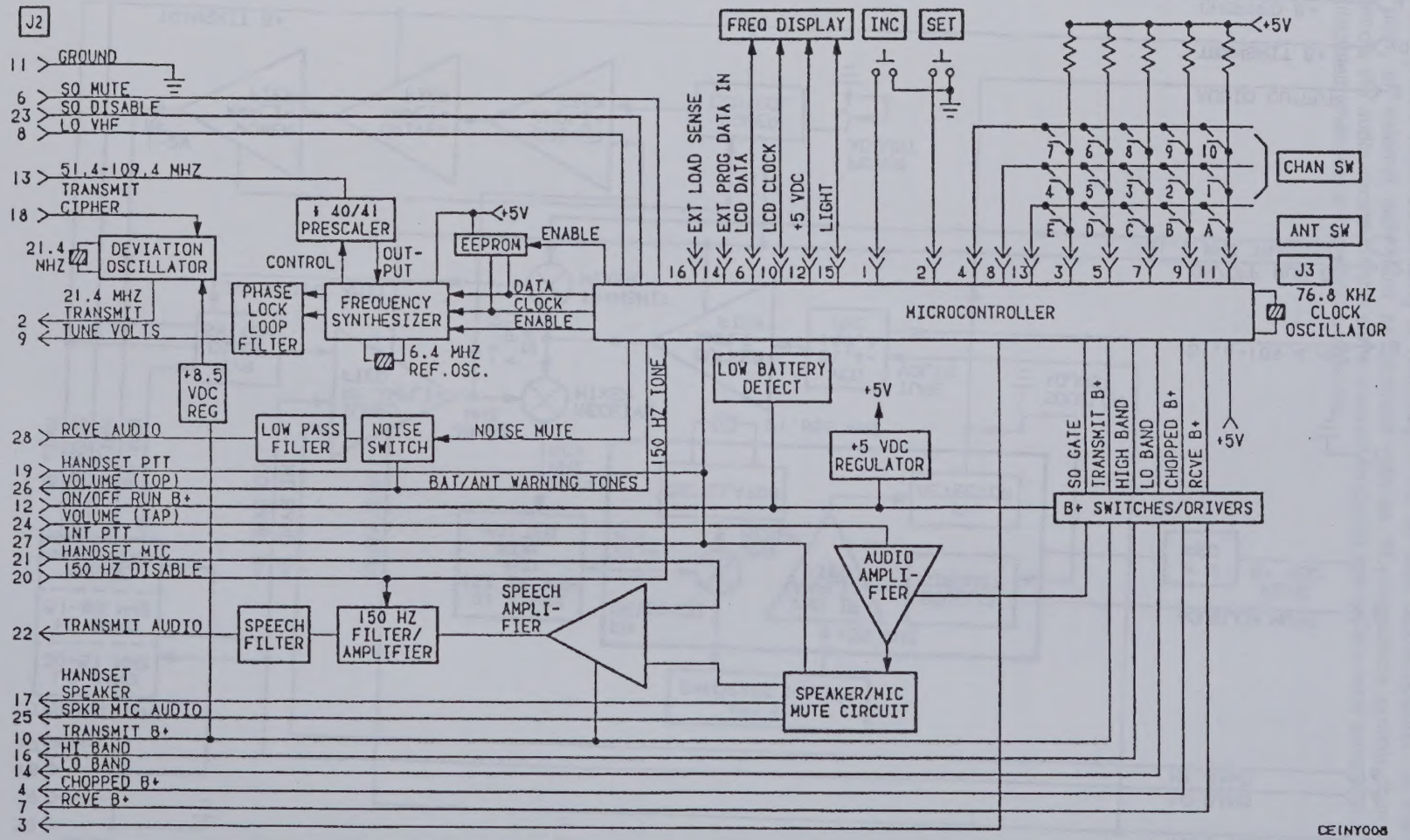


Figure 4-4. Synth/AF Module Block Diagram

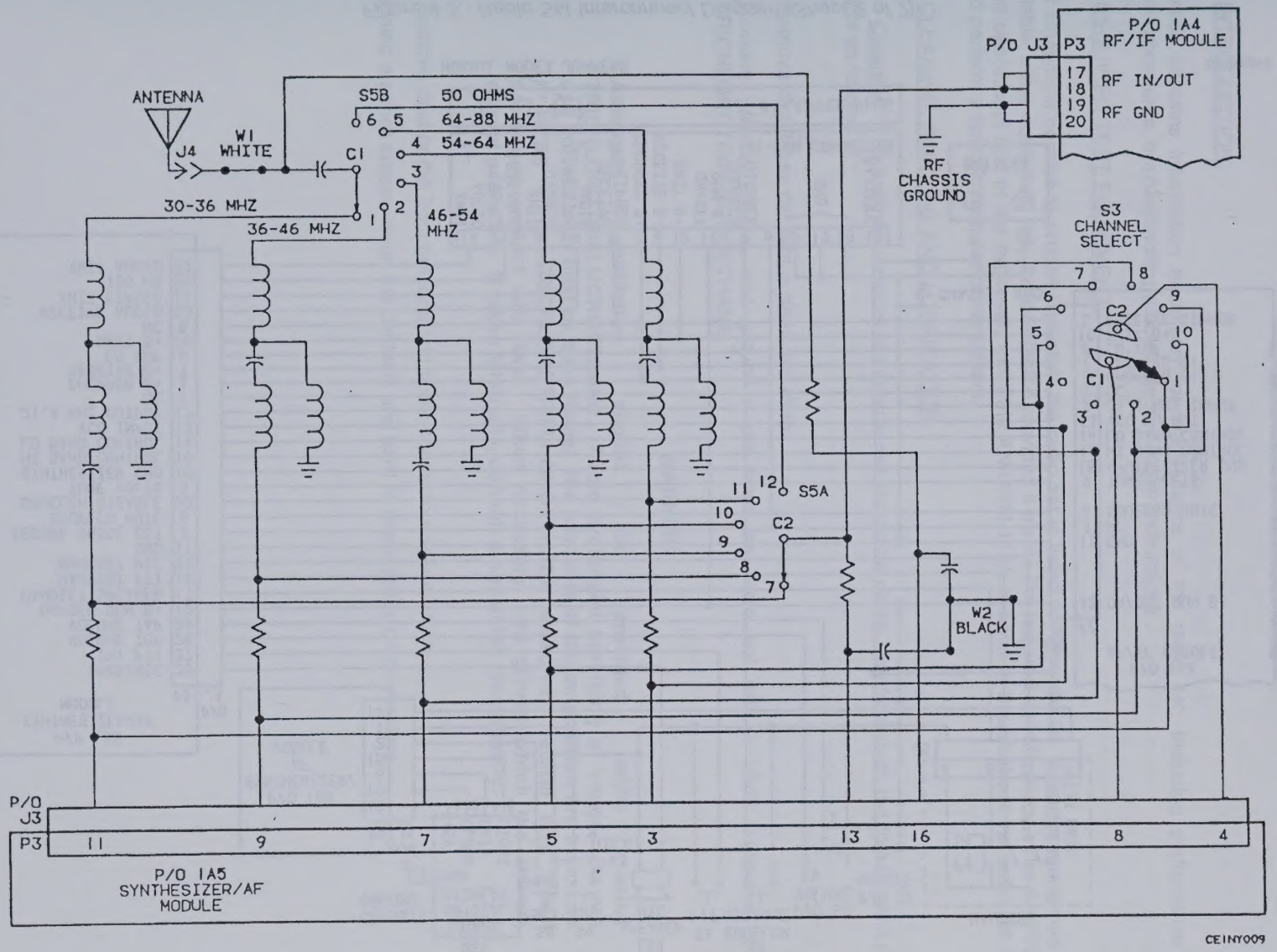


Figure 4-5. Radio Set Interconnect Diagram (Sheet 1 of 2)

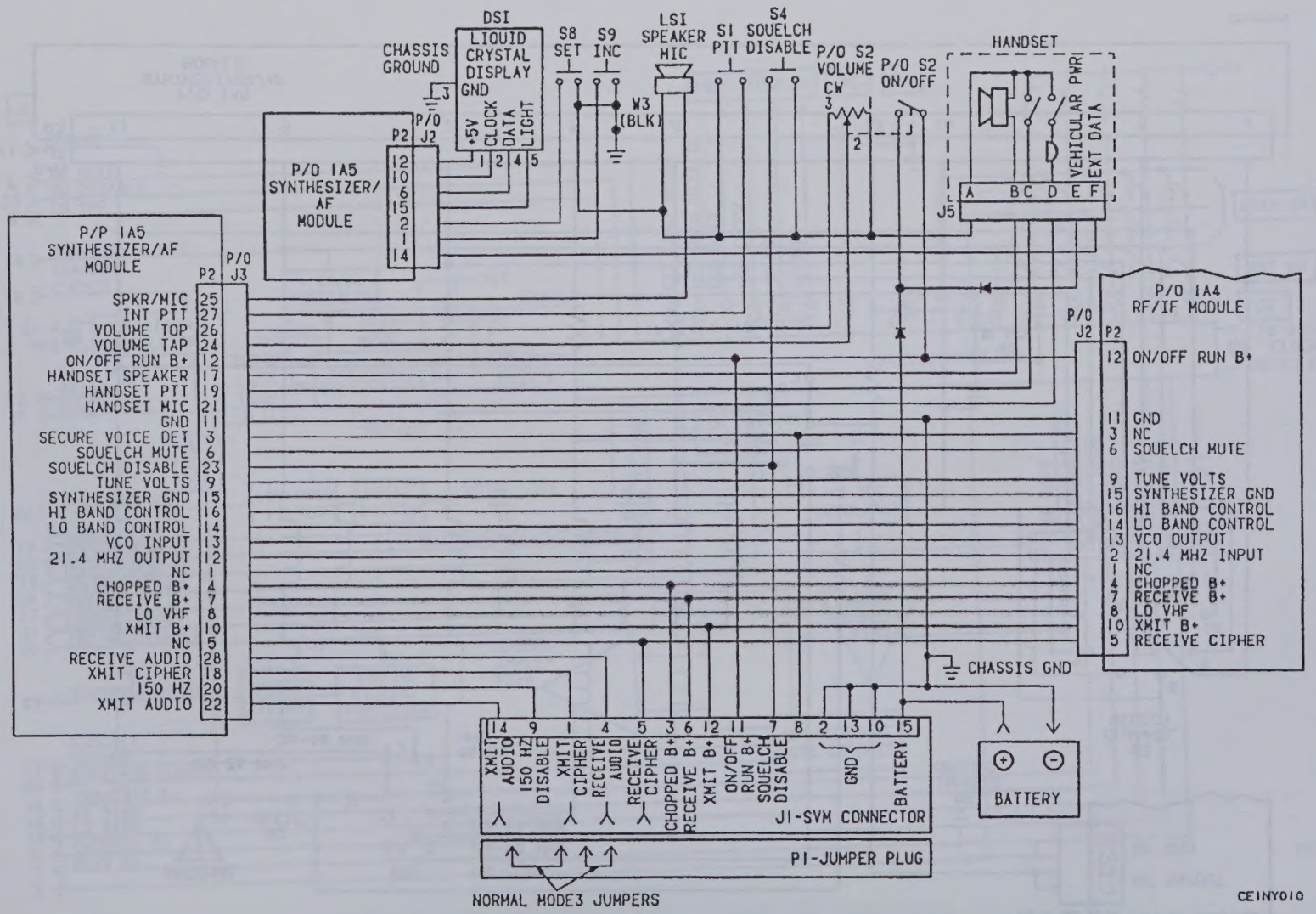


Figure 4-5. Radio Set Interconnect Diagram (Sheet 2 of 2)

SECTION V

MAINTENANCE INSTRUCTIONS

5-1 INTRODUCTION.

This section contains information necessary for maintenance of the radio set, Including performance test checks, alignment procedures, troubleshooting procedures and repair Instructions

5-2 REQUIRED TEST EQUIPMENT.

The test equipment needed to properly maintain the radio set is listed in Appendix B. If the recommended equipment Is not available, other equipment may be substituted provided it meets the required specifications. The AN/PRM-34 IS used to run an operational test of the radio set, while the AN/GRM-114A is used to troubleshoot the radio set to the module level and perform a specification performance test.

5-3 CLEANING, PAINTING AND LUBRICATION.

5-3.1 Cleaning. The exterior surfaces of the radio set should be clean, free from dust, dirt, grease and fungus. Clean the exterior as follows:

a Remove dust/loose dirt with a clean soft cloth

b. Remove grease, fungus, and ground-in dirt from the radio set with a cloth dampened (not wet) with TRICHLOROTRIFLUOROETHANE

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Avoid prolonged breathing of vapor. Do not use solvent near heat or open flame: the products of decomposition are toxic and irritating Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, avoid prolonged contact with skin. When necessary, use gloves which the solvent cannot penetrate. If taken internally, consult a physician Immediately.

c. Remove dust or dirt from antenna and audio connectors with a brush.

d. Using a pencil eraser, clean the contacts and hard to reach areas on connectors.

5-3.2 Painting. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Use a brush to apply two thin coats of paint on the bare metal to protect from further corrosion.

CAUTION

Do not paint the ANT or AUDIO connectors.

5-3.3 Lubrication. Prior to reassembly of the radio set, all rubber seals should have a thin film of silicone grease applied to help preserve watertightness and keep the rubber seals pliable. A small amount of silicone grease should also be applied to the "O" ring in the handset connector to facilitate insertion.

5-4 PERFORMANCE VERIFICATION.

5-4.1 Test Equipment Setups. The test setup requirements for performing the operational checkout procedure is shown in figure 5-1. The test setup requirement for performing the general support maintenance procedures is shown in figure 5-2.

5-4.2 Operational Checkout and Maintenance Procedures. Table 5-1 contains the operational checkout procedure for the radio set. This procedure is performed to ensure the radio set meets acceptable operational performance standards. If required indication is not met, forward AN/PRC-126 to next higher level of maintenance. Table 5-2 covers the general support test procedures and isolation steps needed to determine the nature of a fault. If a fault exists, the "fault isolation" column of the procedure will indicate the most likely faulty assembly or reference an adjustment procedure. If after accomplishing procedures as directed in fault isolation step, the fault still exists, swap out modules one at a time with known good modules until fault is corrected.

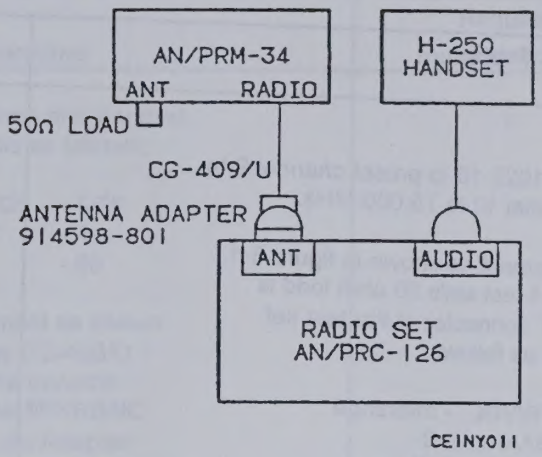


Figure 5-1. Operational Test Setup

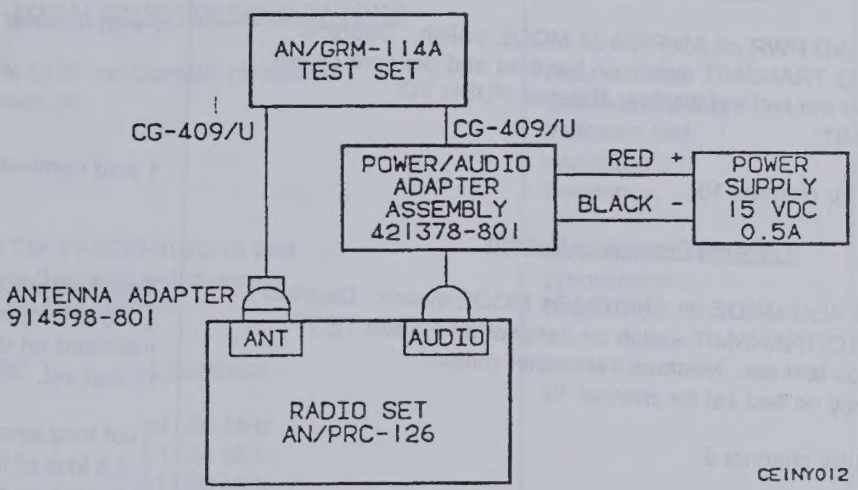


Figure 5-2. General Support Test Setup

Table 5-1. Radio Set Operational Checkout Procedure

Step	Procedure	Required indication
1.	Refer to TM 11-5820-1025-10 to preset channel 9 to 40.000 MHz and channel 10 to 75.000 MHz.	
2.	Connect the test equipment as shown in figure 5-1. Insure the AN/PRM-34 test set's 50 ohm load is connected to the ANT connector of the test set. Set radio set controls as follows: OFF/VOL - midrange CHAN - 9 ANT - 50	
	Transmit Power Output	
3.	Select FWD PWR on AN/PRM-34 MODE switch. Depress PUSH TO TRANSMIT switch on handset and observe power output on the test set display. Release PUSH TO TRANSMIT.	1 watt nominal
4.	Repeat for channel 10.	1 watt nominal
	Transmit Frequency Stability	
5.	Select FREQ MODE on AN/PRM-34 MODE switch. Depress PUSH TO TRANSMIT switch on handset and press TEST button on test set. Measure transmitter output frequency on test set for channel 10.	Test frequency within ± 2.5 kHz of frequency indicated on display of test set.
6.	Repeat for channel 9.	Test frequency within ± 2.5 kHz of frequency indicated on display of test set.
	Receiver Sensitivity	
7.	Select SENS SQ on AN/PRM-34 MODE switch. Press TEST button on test set with radio set in channel 9.	Clear audio tone will be heard in handset.
8.	Repeat for channel 10.	Clear audio tone will be heard in handset.
	Receiver Squelch Sensitivity	
9.	Press TEST button on test set with radio set in channel 10.	Radio set squelch in will break and an audio tone will be heard in the handset.

Table 5-2. Radio Set General Support Maintenance Procedure

Step	Procedure	Required indication	Fault isolation step
1.	Remove radio set antenna and handset. Set the radio set controls as follows: OFF/VOL - OFF CHAN - 1 ANT - 50		
2.	Connect the test equipment as shown in figure 5-2. Insure the CG-409/U cable is connected to the transmit input connector. Set the SPKR/MIC switch on the Power/audio Adapter to EXT. Adjust power supply output for 15 Vdc. LOCAL CONTROLS/INDICATORS		
3.	Turn (ON-OFF Vol Control) clockwise to turn radio on.	After several seconds, display indicates last operating frequency.	Replace Synth/AF assembly per para. 5-8
4.	Refer to TM 11-5820-1025-10 and reprogram the radio set channels 1 through 10 as follows. Channel — Frequency 1 — 30.050 MHz 2 — 50.950 MHz 3 — 51.050 MHz 4 — 87.950 MHz 5 — 40.050 MHz 6 — 70.050 MHz 7 — 33.025 MHz 8 — 60.050 MHz 9 — 45.000 MHz 10 — 75.000 MHz	Display indicates programmed frequency.	Replace Synth/AF assembly per para. 5-8
5.	Select channels 1 through 10 on radio set while observing display.	Display indicates programmed frequencies for channels 1 through 10 as programmed in step 4.	Replace Synth/AF assembly per para. 5-8

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
	NOTE **The following transmit and receive checks can be performed on any of the preset channels. To ensure a complete operational checkout of all possible transmit and receive bands there should be a preset frequency for each of the band segments shown in step 4. As a minimum the radio should be checked out on one frequency below 51 MHz (Channel 9) and one above 51 MHz (Channel 10).** TRANSMIT MEASUREMENTS **NOTE** **The PUSH TO TRANSMIT button on the radio set or the test box must be depressed and held for duration of measurement to obtain a reading.**		
6.	Transmit Power Output Set the radio set controls as listed. OFF/VOL - midrange CHAN - any ANT - 50		
7.	Set audio generator output level of AN/GRM-114A to minimum (zero). Set AN/GRM-114A to the RCVR mode.		

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
8.	Set thumbwheel switches on the AN/GRM-114A to operating frequency. Depress PUSH TO TRANSMIT button and measure power output on wattmeter.	1 watt nominal	Replace RF/IF assembly per para. 5-8 check power output level adjustment.
	Transmit Frequency Stability		
9.	With PUSH TO TRANSMIT button pressed. Measure transmitter output frequency on frequency error meter. Release PUSH TO TRANSMIT button.	Test Frequency within ± 2.5 kHz of frequency indicated on display.	Replace Synth/AF assembly per para. 5-8
	Transmitter Modulation		
10.	Set audio generator frequency of GRM-114A to 1 kHz and RF level output level to minimum (zero).		
11.	Depress PUSH TO TRANSMIT button and measure deviation on deviation meter. Release PUSH TO TRANSMIT button.	2.5 to 3.5 kHz deviation.	Replace Synth/AF assembly per para. 5-8
12.	Depress PUSH TO TRANSMIT button and measure squelch tone frequency on GRM-114A. Release PUSH TO TRANSMIT button. Set 150 Hz tone to off.	150 ± 2 Hz (Scope rotation of dial less than 2 revolutions per second.)	Replace Synth/AF assembly per para. 5-8
	NOTE **For steps 13 and 14, pushing the INC and PUSH TO TRANSMIT buttons on the radio set disables the internal 150 Hz squelch tone.**		

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
13.	While depressing PUSH TO TRANSMIT and INC buttons simultaneously, increase INT MOD on GRM-114A 1000 Hz audio generator output level until modulation deviation is 7 KHz on deviation meter. Note audio input level. Release PUSH TO TRANSMIT and INC buttons.	Less than 1 volt rms.	Replace Synth/AF assembly per para. 5-8
14.	Connect CG-409/U cable from DE-MOD to INPUT on GRM-114A. Depress PUSH TO TRANSMIT and INC buttons. Measure harmonic distortion of 1 kHz modulation tone. Release PUSH TO TRANSMIT button.	Less than 15% distortion.	Replace Synth/AF assembly per para. 5-8
15.	Increase output of audio signal generator to maximum (not to exceed 10 volts) until a reading of 4 volts max on audio voltmeter is obtained. Remove CG-409/U cable between DE-MOD and input on GRM-114A. Depress PUSH TO TRANSMIT button and measure limited modulation deviation on deviation meter. Release PUSH TO TRANSMIT button.	Less than 12 kHz deviation	Replace Synth/AF assembly per para. 5-8
	Transmit Microphone		
16.	Set SPKR/MIC switch on the Power/ audio Adapter to INT.		
17.	Depress PUSH TO TALK button on radio set. Speak into microphone (hold microphone about 1 inch from mouth) and observe modulation deviation meter. Release PUSH TO TALK switch.	Approximately 7 kHz deviation with peaks limited to less than 12 kHz.	Replace Frame/ panel assembly per para. 5-8
	RECEIVER MEASUREMENTS **CAUTION** **Do not depress PUSH TO TALK button when radio set is connected for receiver measurements.**		

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
	Receiver Sensitivity		
18.	Connect CG-409/U cable to the receive output connector. Set SPKR/MIC switch on the Power/ audio Adapter to EXT.		
19.	Adjust RF level signal generator of GRM-114A for a 0.5 microvolt output level at the same frequency as indicated on the radio set display. Set modulation for 1 kHz at 8 kHz deviation. Adjust radio set VOL control for 1.2 Vrms audio output level on distortion analyzer VOLTMETER of GRM-114A.	1.2 vrms present on distortion analyzer VOLTMETER.	Replace RF/IF assembly per para. 5-8, or check squelch adjustment.
20.	Measure audio output SINAD* ratio on distortion analyzer. *SINAD = $\frac{\text{Signal + Noise + Distortion}}{\text{Noise + Distortion}}$	SINAD* RATIO 10 dB minimum for 0.5 microvolt input.	Replace RF/IF assembly per para. 5-8
	Receiver Squelch Sensitivity		
21.	Set SPKR/MIC switch on Power/audio Adapter to INT. Reduce RF signal generator output level to minimum. The squelch should activate and quiet audio output of receiver. Slowly increase RF signal generator output level until squelch releases and normal audio output is restored in the speaker.		
22.	Observe RF signal generator output level.	Less than 0.5 microvolts	Check squelch adjustment or replace RF/IF assembly per para. 5-8

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
	Receiver Audio Output Distortion		
23.	Set SPKR/MIC switch on Power/audio Adapter to EXT. Adjust RF signal generator for a 1.0 millivolt output level. Adjust radio set VOL control for 1.2 Vrms audio output level on distortion analyzer VOLTMETER.		
24.	Measure receiver audio output harmonic distortion on distortion analyzer.	Less than 15% distortion.	Replace RF/IF assembly per para. 5-8
	Receiver Speaker and Speaker Muting		
25.	Set SPKR/MIC switch to INT. The 1 kHz modulation tone should be heard from speaker (adjust VOL as necessary).	1 kHz tone from speaker heard.	Replace Frame/ Panel assembly per para. 5-8
26.	Set SPKR/MIC switch to EXT. The kHz modulation tone will not be heard (muted) from speaker.	1 kHz tone muted.	Replace Synth/AF assembly per para. 5-8
	ANTENNA WARNING TONE		
27.	The antenna warning tone should sound if the antenna switch is in any position other than 50 when the test set RF cable is connected. When the test set RF cable is disconnected and the SPKR/MIC switch is in the INT position, the warning tone should cease for the switch positions and frequency ranges as follows:	Warning tone (1000 Hz at 1 second intervals)is present or absent according to chart. Tone is clear with no background noise present in speaker.	Replace Synth/AF assembly per para. 5-8

ANT Sw Position	Frequency	Range (MHz)
A	30.000 thru	35.975
B	36.000	45.975
C	46.000	53.975
D	54.000	63.975
E	64.000	87.975

Table 5-2. Radio Set General Support Maintenance Procedure-CONT

Step	Procedure	Required indication	Fault isolation step
	LOW BATTERY TONE		
28.	Reconnect test set RF cable and reset antenna SW to 50. Reduce radio set dc supply voltage to 10.0 Vdc. Check for low-battery warning tone in radio set speaker (adjust VOL as necessary).	Warning tone (four, 400 Hz beeps at 6 second intervals) present. Tone is clear with no background noise present in speaker.	Replace Synth/AF assembly per para. 5-8
29.	Readjust power supply output for 15 Vdc. Set ON/OFF Vol control to OFF and then to ON to clear tone.		
30.	Testing complete. Turn off power to all equipment.		

5-5 SQUELCH ADJUSTMENT PROCEDURES.

Perform the following adjustment procedure as instructed in the "fault isolation" column of table 5-2 or as required to obtain the desired operation from the radio set. Adjustment location is shown in figure 5-3. An adjustment tool is provided with the radio set and is stored in the bottom of the module cover. To gain access to the adjustment control, disassemble the radio set as follows:

a. Unfasten latches on battery case and remove the battery case and battery (if installed).

b. Remove module cover by turning the two captive screws counterclockwise (located on bottom of module cover).

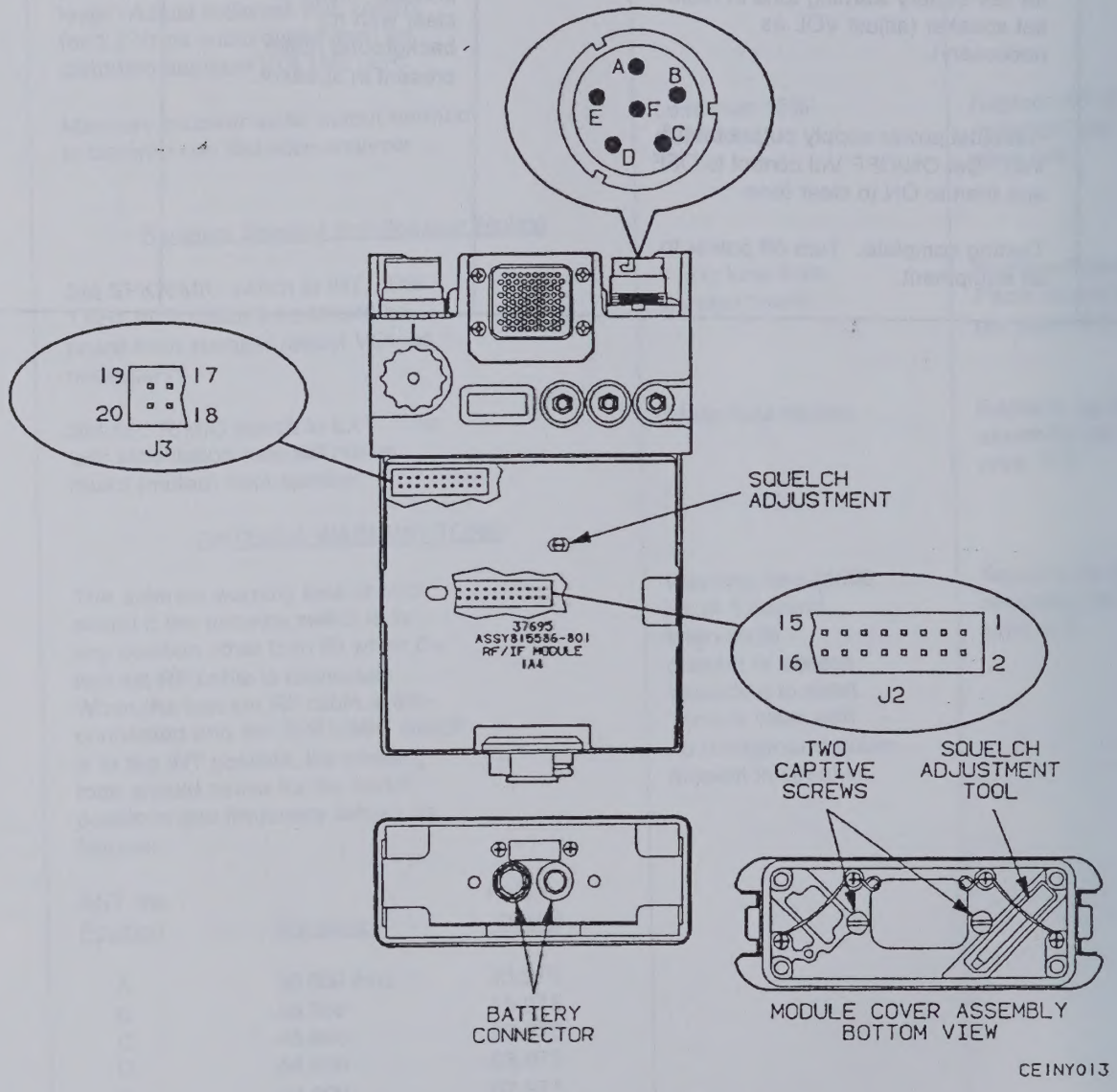


Figure 5-3. Radio Set Component Locations Diagram (Sheet 1 of 2)

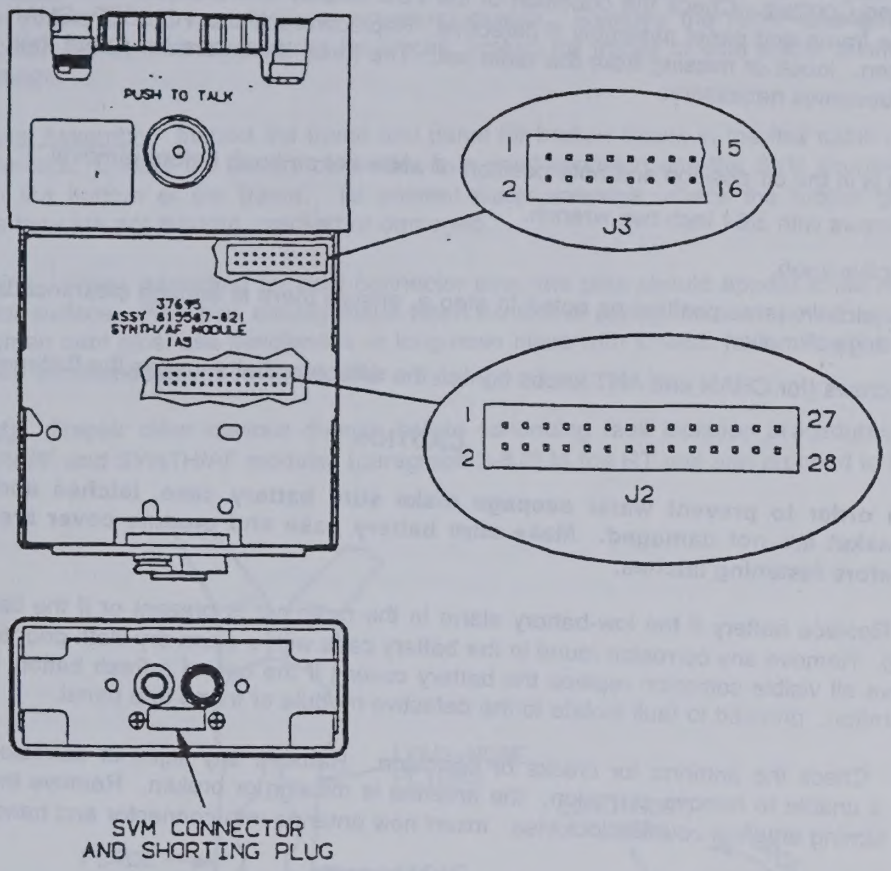


Figure 5-3 Radio Set Component Locations Diagram (Sheet 2 of 2)

NOTE

The squelch adjustment should not be made on a degraded channel (refer to para. 3-3) as the result would be reduced sensitivity on nondegraded channels due to higher squelch threshold level.

c. Adjust squelch control with squelch adjustment tool (located under spring clip on the bottom of the module cover.

d. Slowly adjust control clockwise until receiver completely quiets (no noise bursts), then continue to advance control one half turn clockwise.

5-6 PHYSICAL INSPECTION

If the radio set falls to operate properly, perform a physical inspection of each Item in accordance with the following paragraphs Refer to para. 5-8 for Disassembly/Assembly procedures as required. Repair obvious defects before proceeding with In-depth fault Isolation procedures

5-6 1 Switches and Controls. Check the condition of the LCD display and the mechanical function of each switch and control. replace the frame and panel assembly If defective. Replace/repair the VOL/OFF, CHAN or ANT control knobs If the knobs are broken. loose or missing from the radio set. The three knobs are held onto their shafts by setscrews. If knob replacement becomes necessary:

a. knob is in the off position and note position of white dot on knob before removal.

b. setscrews with 3/64 Inch hex wrench.

c. defective knob.

d. new knob In same position as noted In step a, ensure there is enough clearance under the knob to allow a full range of motion.

e. setscrews (for CHAN and ANT knobs tighten the setscrew that engages the flattened shaft first).

CAUTION

In order to prevent water seepage make sure battery case, latches and rubber gasket are not damaged. Make sure battery case and module cover are aligned before fastening latches.

5-6 2 Battery. Replace battery if the low-battery alarm In the radio set is present or if the battery shows any signs of leakage or venting. Remove any corrosion found in the battery case with a clean dry cloth prior to installing a new battery. If unable to remove all visible corrosion replace the battery cover. If the use of a fresh battery does not return the radio set to normal operation. proceed to fault isolate to the defective module or frame and panel.

5-6 3 Antenna. Check the antenna for cracks or corrosion. Remove any signs of corrosion with a clean dry cloth. Replace antenna if unable to remove corrosion. the antenna Is missing or broken. Remove the damaged antenna from the connector by turning antenna counterclockwise. Insert new antenna into connector and hand tighten clockwise

CAUTION

Be careful not to use too much force when Installing new antenna or the plastic band may break rendering the radio unserviceable.

5-6.4 Connectors. Check radio set connectors for corrosion or thread damage. Remove any signs of corrosion with a clean dry cloth. If unable to remove corrosion or a connector is loose. stripped or damaged, replace the frame and panel assembly.

CAUTION

If burned or charred spots are observed. do not attempt to fault Isolate by installing a known good spare module. it may cause damage to the good module.

5-6.5 Module Assemblies. To inspect the modules, remove the module cover from the RT unit by turning the two captive screws on the bottom of the module cover counterclockwise. Remove the RF/IF and SYNTH/AF modules in accordance with paragraph 5-8.2. Inspect modules for cracks, broken foil traces or cold solder connections. Inspect the module sockets for damage.

5-6.6 Frame and Panel Assembly. Inspect the frame and panel for broken traces in the flex cable or for bent or broken pins in the frame connectors. Ensure the battery connector is in good condition and the SVM shorting plug is installed in the SVM connector in the bottom of the frame. To prevent water seepage, check the rubber gaskets in the panel assembly to make sure they are not missing, cracked or damaged.

5-6.6.1 Connector Pins. When inspecting for bent connector pins, the pins should appear to be reasonably vertical in relation to the connector surface. Bent pins usually result when excessive prying force is applied to only one end or side of a module. To straighten bent pins, use needlenose or long-nose pliers with smooth jaws. Position the jaws so that the whole pin is straightened simultaneously (see figure 5-4).

5-6.6.2 Other Defects. Repair other obvious defects before continuing fault isolation procedures. If no defects are observed reinstall the RF/IF and SYNTH/AF modules (paragraph 5-8.2) to the RT unit and proceed to fault isolation.

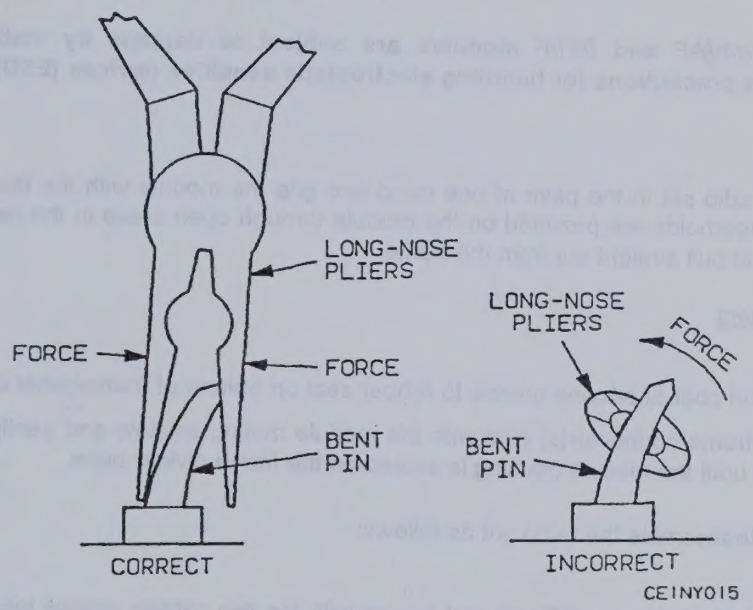


Figure 5-4. Pin Straightening Technique

5-7 TROUBLESHOOTING.

When a fault is detected in the radio set during the general support maintenance procedures (table 5-2), the fault isolation column of the procedure will indicate the most likely defective assembly, or reference an adjustment procedure.

5-8 REPAIR.

After a fault is isolated to a defective assembly, repair the radio set as outlined in the following procedures. Repair of the radio set consists of disassembly replacement of defective items found during physical inspection (paragraph 5-6) or troubleshooting (paragraph 5-7), and reassembly of the radio set.

5-8.1 Disassembly. (Refer to figure 5-3.) Disassemble the radio set as follows:

a. Unfasten latches on battery case and remove the battery case and battery (if installed).

b. Remove module cover by turning the two captive screws counterclockwise (located on bottom of module cover).

5-8.2 Removal and Replacement of Modules. The following procedure is used for removal and Insertion of modules in the radio set. The RF/IF module is located on the SPKR/MIC side of the radio set. The SYNTH/AF module is located on the PTT switch side of the radio set.

CAUTION

The Synth/AF and RF/IF modules are subject to damage by static electricity. Observe precautions for handling electrostatic sensitive devices (ESD).

Removal

Hold the radio set in the palm of one hand and grip the module with the thumb and forefinger of the other hand. Fingerholds are provided on the module through open areas in the radio set frame. Gently rock the module and pull straight out from the frame.

Replacement

a. Apply a thin coat of silicone grease to rubber seal on bottom of frame/panel assembly.

b. Align the frame connector(s) pins with the module mating sockets and gently push the module straight into the frame until the module housing is seated on the frame divider plate.

5-8.3 Reassembly. Reassemble the radio set as follows:

a. Slide module cover over RT unit and secure with the two captive screws located on the bottom of the cover (turn clockwise until hand tight).

b. Apply a thin coat of silicone grease to the rubber seal on bottom of RT unit.

c. Plug battery into mating connector on bottom of RT unit.

d. Replace battery case and secure with the two latches.

5-9 PLACING IN SERVICE.

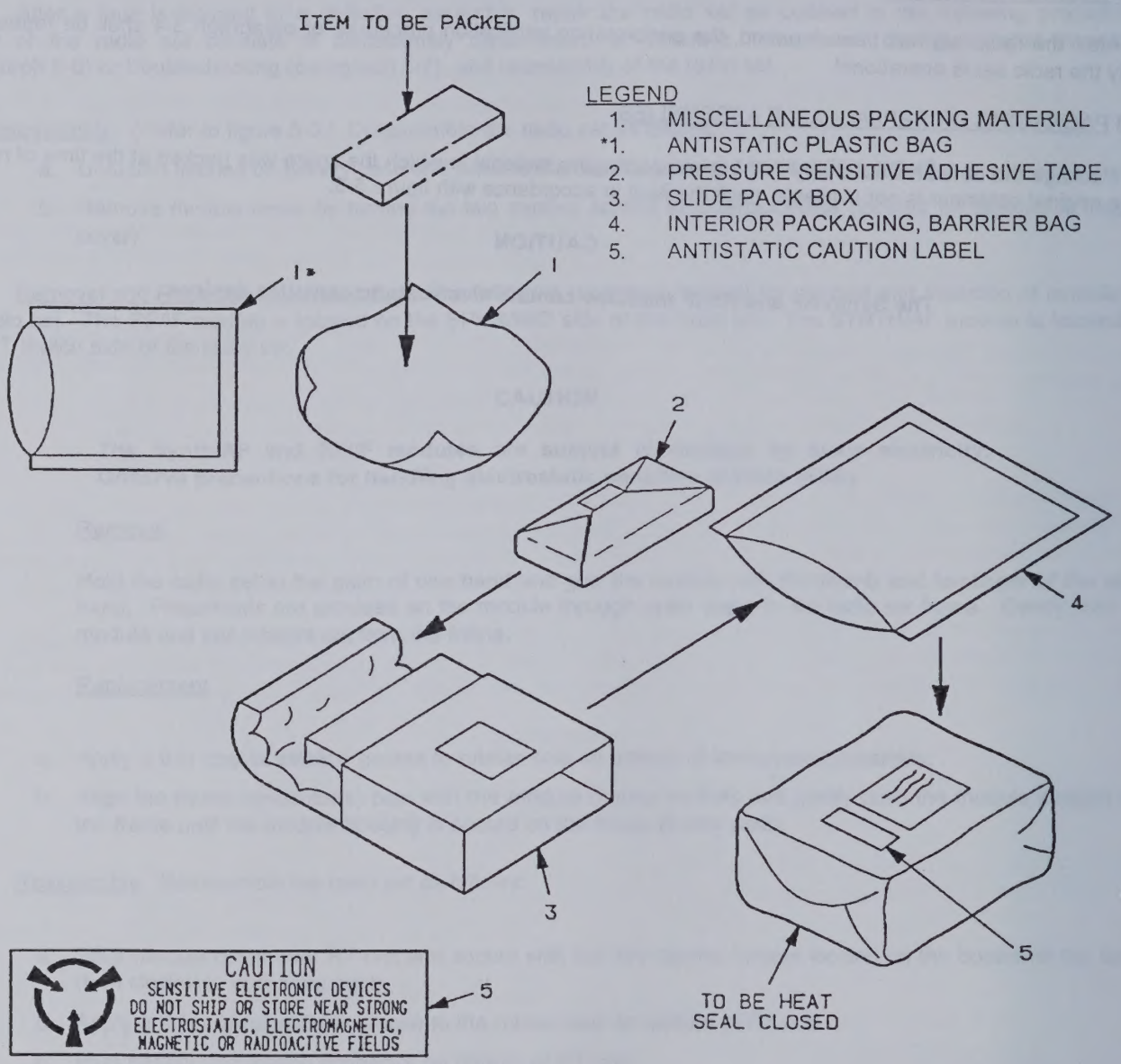
After the radio set has been repaired, the performance verification procedure of paragraph 5-4 shall be repeated to verify the radio set is operational.

5-10 PACKAGING OF REPLACEABLE ASSEMBLIES.

Package the defective assembly in the same packaging material in which the spare was packed at the time of receipt. If the original container is not available, pack the item in accordance with figure 5-5.

CAUTION

The Synth/AF and RF/IF modules contain electrostatic sensitive devices.



* USE ANTISTATIC PLASTIC BAG AND CAUTION LABEL FOR THE SYNTH/AF AND RF/IF ASSEMBLIES.

Figure 5-5. Replaceable Assemblies Packaging Diagram

APPENDIX A

REFERENCES

A-1 SCOPE.

This appendix lists the forms and publications that are referenced in this manual or that contain information applicable to the maintenance of Radio Set AN/PRC-126.

A-2 FORMS.

DA Form 2028	Recommended Changes to Equipment Technical Manuals.
DA Form 2404	Equipment Inspection and Maintenance Worksheet.
Standard Form 368	Quality Deficiency Report.

A-3 PUBLICATIONS.

DA Pam 25-30	Consolidated Index of Army Publications and Blank Forms.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
DA Pam 738-750	The Army Maintenance Management System (TAMMS).
TM 750-244-2	Procedure for Destruction of Electronics Material to Prevent Enemy Use (Electronics Command).
TM 11-5820-1025-10	Operators Manual, AN/PRC-126 Radio Set.
TM 11-6625-3016-10	Operators Manual, AN/GRM-114A Radio Test Set.
TM 11-6625-3015-14	Operator's, Organizational, Direct Support and General Support Maintenance Manual, AN/PRM-34 Radio Test Set.

APPENDIX B
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations for AN/PRC-126. It authorizes levels of maintenance for specific Maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. Maintenance Function

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of-comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, module (component or assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

B-3. Column Entries

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate "work time" figures will be shown for each level. The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

UNIT
C - Operater/Crew
O - Organizational
INTERMEDIATE
F - Direct Support
H - General Support
DEPOT
D - Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets (not Individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in section IV, Remarks, which is pertinent to the item opposite the particular code.

B-4. Tool and Test Equipment Requirements (Sect. III)

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions,

b. Maintenance Level. The codes in this column indicate the maintenance level allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the federal Supply Code for manufacturers (5-digit) in parentheses.

B-5. Remarks (Sect. IV)

a. Reference Code. This code refers to the appropriate item in section II, column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in section II.

Section II. MAINTENANCE ALLOCATION CHART FOR RADIO SET AN/PRC-126

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT	(6) REMARKS
			C	O	F	H	D		
00	RADIO SET AN/PRC-126	INSPECT		0.10					
		TEST		0.10				2,6,7	
		ADJUST		0.10					A
		VICE\	0.10						B
		SERVICE		0.10					
		REPAIR		0.10				13	C
		REPAIR			.05				
		REPAIR				.05			
01	RECEIVER XMTR RT-1547/PRC-126	INSPECT				0.30		1,3,4,5,6,8,9	
		TEST				0.10		10,12	
		ADJUST				0.10			A,D
		REPLACE		0.10					
		REPAIR			1.0				E
0101	FRAME & PANEL ASSY	REPLACE			.05			3,8,9,10,11	F
		REPAIR					2.0	TBD	
		REPAIR		.05					
		REPAIR			.05				
		REPAIR				.05			
0102	RADIO FREQUENCY	REPLACE			.05			3,8,9,10,11	G
		REPAIR					2.0	TBD	
0103	SYNTHESIZER	REPLACE			.05			3,8,9,10,11	G
		REPAIR					2.0	TBD	

SECTION III TOOL AND TEST EQUIPMENT REQUIREMENTS FOR RADIO SET AN/PRC-126

TOOL OR TEST EQUIPMENT REF CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	F	TEST SET, RADIO AN/GRM-114A	6625-01-144-4486	
2	O	TEST SET, RADIO AN/PRM-34	6625-01-094-5646	
3	F	TOOL KIT, ELEC EQUIP TK-105/G	5180-00-610-8177	
4	F	POWER SUPPLY, PP-39408/G OR EQUIV.	6130-01-164-0548	
5	F	POWER/AUDIO ADAPTER 421378-801	5820-01-276-0380	
6	O,F	ANTENNA ADAPTER 914598-801	5985-01-097-7337	
7	O	DUMMY LOAD, ELEC DA-437/GRC-103 50, OHM LOAD OR EQUIV.	5985-00-089-8990	
8	F	TABLE MAT, CONDUCTIVITY 1872 -	6530-01-155-8865	
9	F	WRIST STRAP 2066 LARGE	4240-01-165-8865	
10	F	J WRIST STRAP 2066 SMALL	4240-01-165-8866	
11	F	ELEC TOTE BOX 4415	5875-01-141-5886	
12	F	CABLE ASSEMBLY, RADIO CS-409/U	6625-00-295-8241	
13	O	TOOL KIT, ELEC EQUIP TK-101/G	5180-00-064-6178	
14	F	PACE SOLDERING STATION	3439-01-109-8590	
15	F	SPANNER WRENCH (TO REMOVE ANTENNA CONNECTOR) (P/O TK-101/G)	5180-00-064-6178	

SECTION IV REMARKS

REFERENCE CODE	REMARKS
A	ADJUST FREQUENCY ON PRESENT CHANNELS.
B	REPLACE BATTERY. ALL BATTERIES NO LONGER CAPABLE OF PERFORMING THE REQUIRED MISSION SHALL BE DISPOSED OF BY BEING TURNED IN, ACCOMPANIED BY A COMPLETED DD FORM 134B-1, TO THE LOCAL DEFENSE REUTILIZATION AND MARKETING OFFICE (SEE DOD 4160 21 -M).
C	REPAIR LIMITED TO REPLACEMENT OF THE ANTENNA, KNOBS, OR BATTERY.
D	ADJUST SQUELCH.
E	REPAIR LIMITED TO REPLACEMENT OF THE FRAME AND PANEL MODULE, RF/IF MODULE, SYNTH/AF MODULE, BATTERY HOUSING SEAL, MODULE COVER ASSEMBLY, DUST CAP ASSEMBLY.
F	REPAIR LIMITED TO RELACEMENT OF THE KNOBS, SWITCHES, DUMMY CONNECTOR, AND WINDOW GLASS.
G	PARTS BREAKDOWN FOR THE RF/IF MODULE ASSEMBLY, AND SYNTH/AF MODULE ASSEMBLY ARE TO BE DETERMINED AT THE DEPOT LEVEL. **NOTE** **SPECIAL DISPOSITION IS REQUIRED FOR THE FRAME AND PANEL ASSEMBLY, RF/IF MODULE ASSEMBLY, AND SYNTH/AF ASSEMBLY, SEND TO DEPOT FOR FINAL DISPOSITION.** **NOTE** **A RADIO THAT HAS BROKEN OR CHIPPED GUARDS BUT IS OTHERWISE OPERATIONAL, IS NOT TO BE TURNED IN. SMOOTH BROKEN OR JAGGED EDGES IAW NOTE "E".** **NOTE** **THE DUMMY CONNECTOR IS ONLY USED WITH THE SECURE VOICE MODULE. RADIOS THAT HAVE DAMAGED DUMMY CONNECTORS BUT ARE OTHERWISE OPERATIONAL SHALL NOT BE TURNED IN.**

APPENDIX C

REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. Introduction

C-1. Scope

This appendix lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of organizational, direct support and general support maintenance of the AN/PRC-126. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

C-2. General

This Repair Parts and Special Tools List is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair Darts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts list are composed of functional groups in ascending item number sequence. Figure numbers are listed directly beneath the group header.

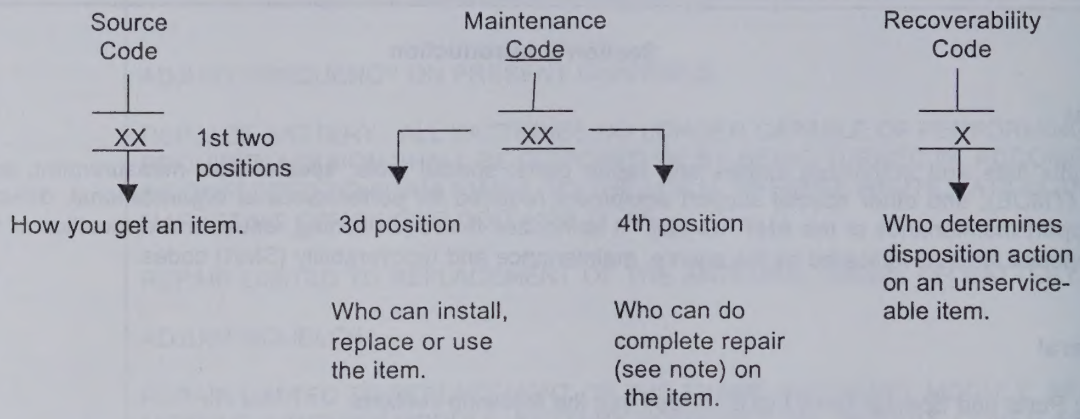
b. Section III. Special Tools List. A list of special tools special TMDF, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in (column (5)) for the performance of maintenance.

c. Section IV. Cross-Reference Index. A list, in National item identification number (NIINJ).sequence, of all National stock numbered items appearing in the listing, followed by a list in alphameric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance. The figure number and item number index lists figure and item numbers in numeric sequence and cross-references, National stock number, Federal Supply Code for Manufacturer and part numbers.

C-3. Explanation of Columns (Section II and III)

a. Item No. (Column (1)). Indicates the number used to identify items called out in the illustration.

b. SMR Code (Column (2)). The source, maintenance, and recoverability (SMR) code is a five-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



NOTE

Complete repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) Source code. The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

Code	Explanation
PA PB PC PD PE PF PG	Stocked items: use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the third position of the SMR code.

NOTE

Items coded PC are subject to deterioration.

KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.

Code	Explanation
MO - Made at org/AVUM category MF - Made at DS/AVIM category MH - Made at GS category ML - Made at Specialized Repair Activity (SRA) MD - Made at Depot	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the description and usable on code (UOC) column and listed in the Bulk Material group of the repair parts list. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at a higher category, order the item from the higher category of maintenance.
AO - Assembled by org/AVUM category AF - Assembled by DS/AVIM category AH - Assembled by GS category AL - Assembled by SRA AD - Assembled by Depot	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the category of maintenance indicated by the source code. If the third position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher category, order the item from the higher category of maintenance.

Code	Explanation
XA	- Do not requisition an "XA" coded item. Order its next higher assembly.
XB	- If an "XB" item is not available from salvage, order it using the FCSM and part number given.
XC	- Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	- Item is not stocked. Order an "XD" coded item through normal supply channels using the FSCM and part number given, if not available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

(2) Maintenance code. Maintenance codes tell you the category of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following categories of maintenance.

Code	Application/Explanation
C	Crew or operator maintenance done within organizational or aviation maintenance.
O	Organizational or aviation unit category can remove, replace, and use the item.
F	Direct support or aviation intermediate category can remove, replace, and use the item.
H	General support category can remove, replace, and use the item.
L	Specialized repair activity can remove, replace, and use the item.
D	Depot category can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions). This position will contain one of the following maintenance codes.

NOTE

Some limited repair may be done on the item at a lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Code	Application/Explanation
O	Organizational or aviation unit is the lowest category that can do complete repair of the item.
F	Direct support or aviation intermediate is the lowest category that can do complete repair of the item.
H	General support is the lowest category that can do complete repair of the item.
L	Specialized repair activity (designate the specialized repair activity) is the lowest category that can do complete repair of the item.
D	Depot is the lowest category that can do complete repair of the item.

Code	Application/Explanation
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B" coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user category.

(3) Recoverability code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

Recoverability codes	Application/Explanation
Z	Nonreparable item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in the third position of SMR code.
0	Reparable item. When uneconomically reparable, condemn and dispose of the item at organizational or aviation unit category.
F	Reparable item. When uneconomically reparable, condemn and dispose of the item at direct support or aviation intermediate category.
H	Reparable item. When uneconomically reparable, condemn and dispose of the item at general support category.
D	Reparable item. When beyond lower category repair capability, return to depot. Condemnation-and disposal of item not authorized below depot category.
L	Reparable item. Condemnation and disposal not authorized below specialized repair activity (SRA).
A	Item requires special handling or condemnation procedures because of specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer appropriate manuals/directives for specific instructions.

c. FSCM (Column (3)). The Federal Supply Code for Manufacturer (FSCM) is a 5-digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

d. Part Number (Column (4)). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part orders.

e. Description and Usable on Code (UOC) (Column (5)). This column includes the following information.

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) In the Special Tools section, the basis of issue (BOI) appears as the last line in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased proportionately.

(3) The statement "END OF FIGURE" appears just below the last item description in Column (5) for a given figure in both section II and section III

f. Qty (Column (6)). Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and the quantity may vary from application to application.

C-4. Explanation of Columns (Section IV)

a. National Stock Number (NSN) Index.

(1) Stock number column. This column lists the NSN by National item identification number (NIIN) sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. When requisitioning items use the complete NSN (13 digits).

(2) Fig. column. This column lists the number of the figure where the item is identified/located. The illustrations are in numerical sequence in sections II and III.

(3) Item column. The item number identifies the item associated with the figure listed in the adjacent Fig. column. This item is also identified by the NSN listed on the same line.

b. Part Number Index. Part numbers in this index are listed by part number in ascending alphameric sequence.

(1) FSCM column. This column lists the Federal supply code for manufacturer.

(2) Part number column. This column indicates the part number assigned to the item.

(3) Stock number column. This column lists the National stock number for the associated part number and manufacturer identified in the part number and FSCM columns to the left.

(4) Fig. column. This column lists the number of the figure where the item is identified/located in sections II and III.

(5) Item column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

c. Figure and Item Number Index.

(1) Fig. column. This column lists the number of the figure where the item is identified/located in sections II and III.

(2) Item column. The item number is that number assigned to the item as it appears in the figure referenced in the adjacent figure number column.

(3) Stock number column. This column lists the National stock number for the item.

(4) FSCM column. The Federal supply code for manufacturer (FSCM) is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

(5) Part number column. Indicates the primary number used by the manufacturer (individual, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of item.

C-5. Special Information

National Stock Numbers. National stock numbers (NSN's) that are missing from P source coded items have been applied for and will be added to this TM by future change/revision when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-MM, Fort Monmouth, NJ 07703-5000 for the part to support your equipment.

C-6. How to Locate Repair Parts

a. When National stock number or part number is not known.

(1) First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the assembly group or subassembly group to which the item belongs.

(3) Third. Identify the item on the figure and note the item number.

(4) Fourth. Refer to the Repair Parts List for the figure to find the part number for the item number noted on the figure.

(5) Fifth. Refer to the Part Number Index to find the NSN, if assigned.

b. When National stock number or part number is known.

(1) First. Using the index of National stock numbers and part numbers, find the pertinent National stock number or part number. The NSN index is in National item identification number (NIIN) sequence (para C-4a(1)). The part numbers in the part number index are listed in ascending alphameric sequence (para C-4b). Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

(2) Second. After finding the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

C-7. Abbreviations

Not applicable.

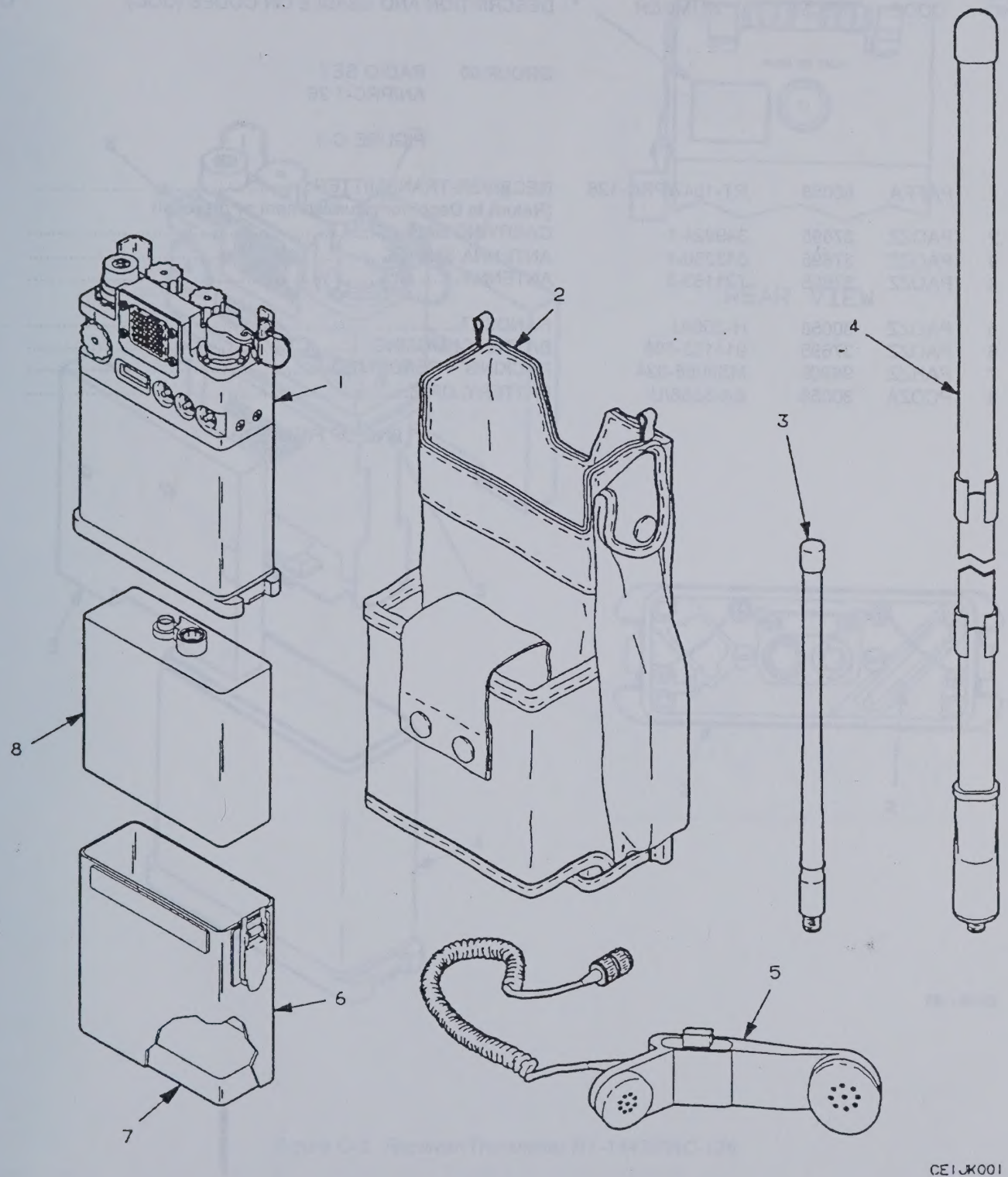


Figure C-1. Radio Set AN/PRC-126

(1) ITEM NO	(2) SMR CODE	(3) PART FSCM	(4) NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 00 RADIO SET AN/PRC-1 26	
				FIGURE C-1	
1	PAFFA	80058	RT-1547/PRC-126	RECEIVER-TRANSMITTER (Return to Depot for refurbishment or disposal)	1
2	PAOZZ	37695	349924-1	CARRYING BAG	1
3	PAOZZ	37695	513250-1	ANTENNA SHORT	1
4	PAOZZ	37695	721153-3	ANTENNA	1
5	PAOZZ	80058	H-250/U	HANDSET	1
6	PAOZZ	37695	914153-805	BATTERY HOUSING	1
7	PAHZZ	96906	MS9068-024	PACKING, PREFORMED	1
8	PCOZA	80058	BA-5588/U	BATTERY, DRY	1
				END OF FIGURE	

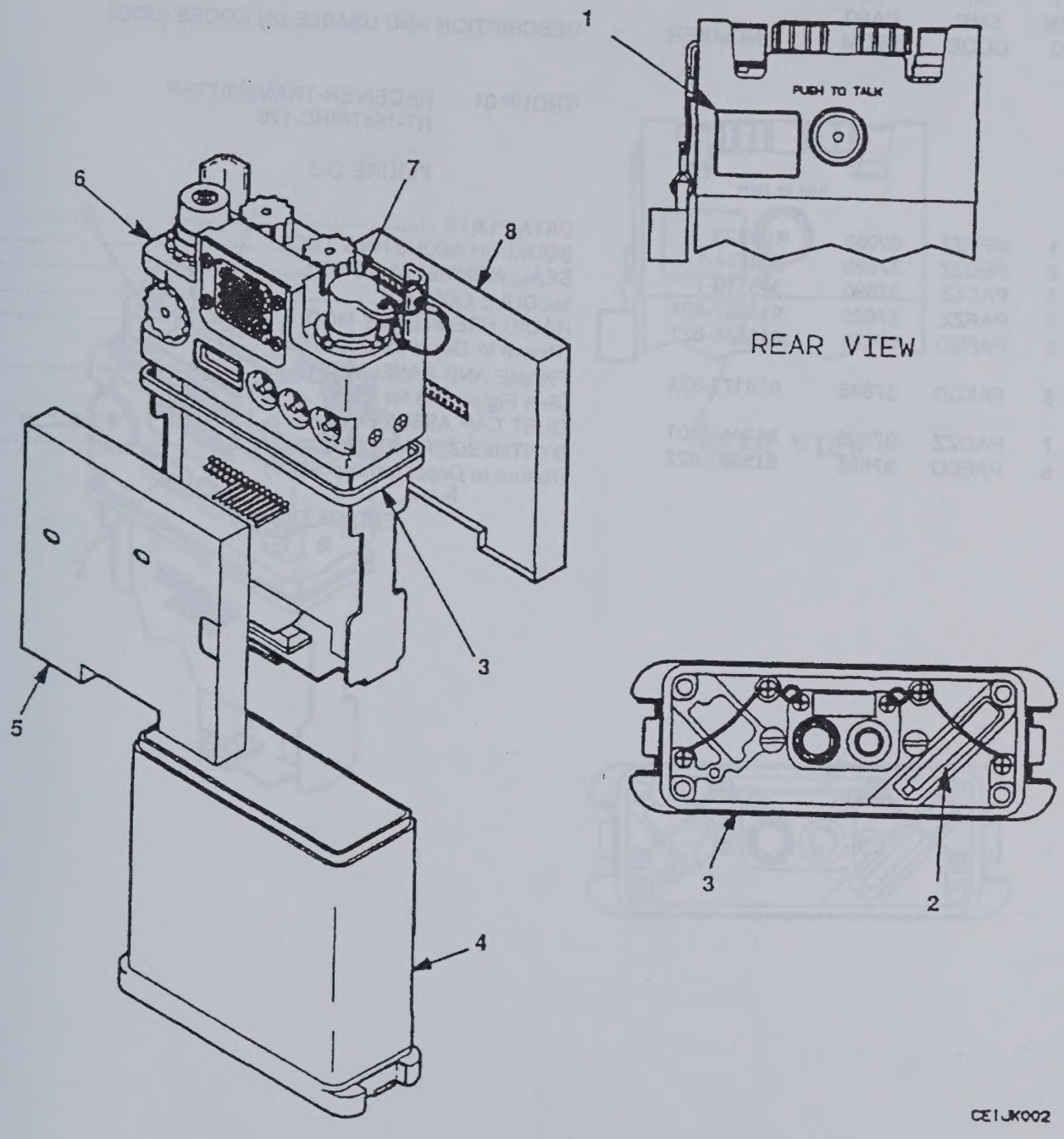


Figure C-2. Receiver-Transmitter RT-1547/PRC-126

(1) ITEM NO	(2) SMR CODE	(3) PART FSCM	(4) NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 01 RECEIVER-TRANSMITTER RT-1547/PRC-126	
				FIGURE C-2	
1	MFFZZ	80063	159828	DATA PLATE	1
2	PEOZZ	37695	808234-1	SQUELCH ADJUSTING TOOL	1
3	PAFZZ	37695	345110-1	SEAL, NONMETALLIC ST	2
4	PAFZZ	37695	918267-804	MODULE COVER	1
5	PAFDD	37695	815586-821	RADIO FREQUENCY MOD (Return to Depot for disposition)	1
6	PAFDD	37695	816173-821	FRAME AND PANEL ASSY (See Figure C-3 for Parts)	1
7	PAOZZ	37695	817455-801	DUST CAP ASSEMBLY	1
8	PAFDD	37695	815587-822	SYNTHESIZER MODULE (Return to Depot for disposition)	1
				END OF FIGURE	

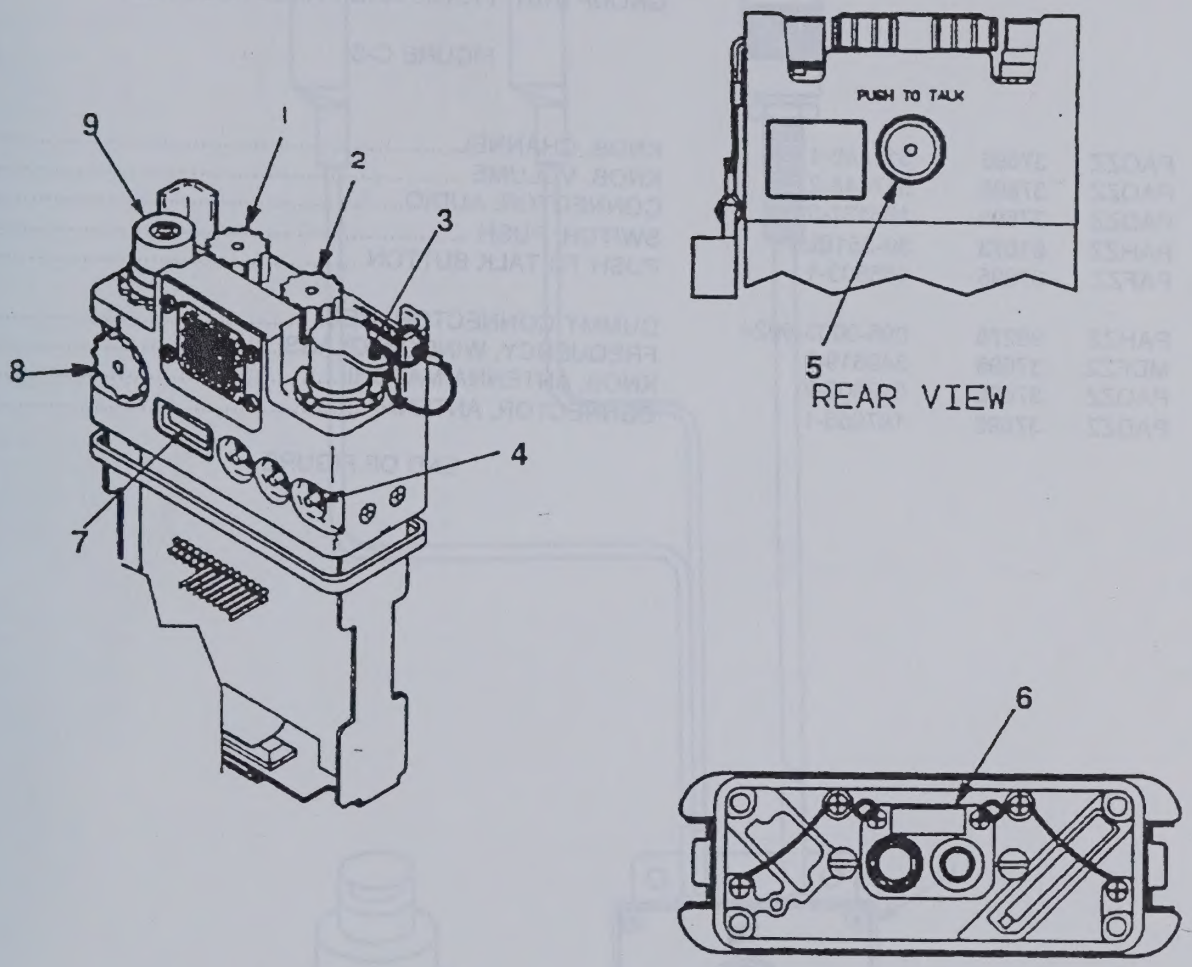


Figure C-3. Frame and Panel Assembly

(1) ITEM NO	(2) SMR CODE	(3) PART FSCM	(4) NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 0101 FRAME AND PANEL ASSEMBLY	
				FIGURE C-3	
1	PAOZZ	37695	517448-1	KNOB, CHANNEL	1
2	PAOZZ	37695	517448-2	KNOB, VOLUME	1
3	PADZZ	37695	186137-5	CONNECTOR, AUDIO	1
4	PAHZZ	81073	39-351BLK	SWITCH, PUSH	3
5	PAFZZ	37695	165803-1	PUSH TO TALK BUTTON	1
6	PAHZZ	98278	095-9003-0024	DUMMY CONNECTOR, REC	1
7	MDFZZ	37695	349619-3	FREQUENCY, WINDOW GLASS	1
8	PAOZZ	37695	516502-2	KNOB, ANTENNA MATCHI	1
9	PADZZ	37695	187055-1	CONNECTOR, ANTENNA	1
				END OF FIGURE	

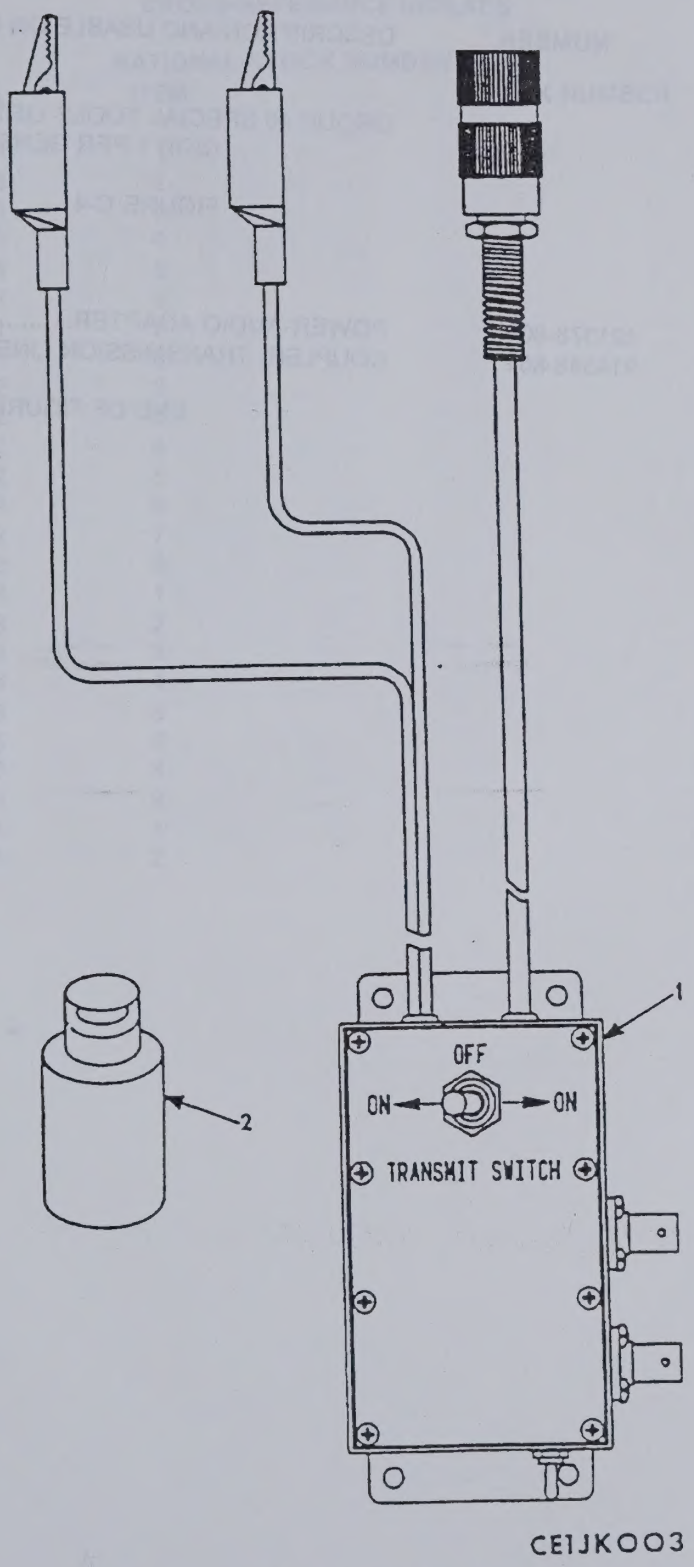
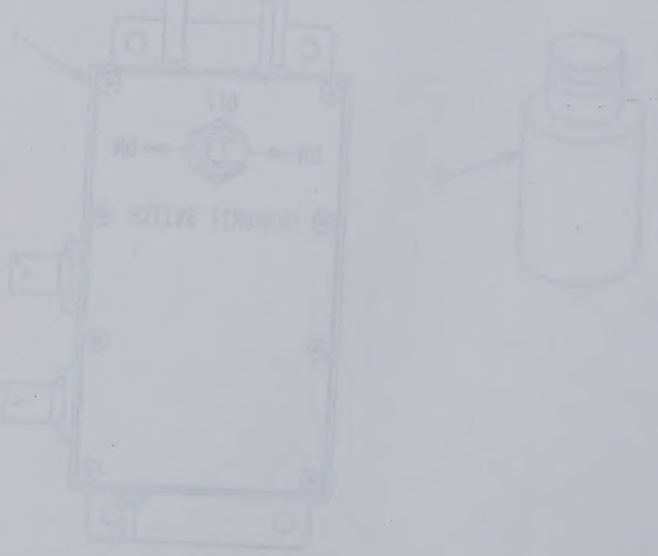


Figure C-4. Special Tool and Test Equipment

(1) ITEM NO	(2) SMR CODE	(3) PART FSCM	(4) NUMBER	(5) DESCRIPTION AND USABLE ON CODES (UOC)	(6) QTY
				GROUP 40 SPECIAL TOOLS LIST (BOI) 1 PER GENERAL SUPPORT	
				FIGURE C-4	
1	PEHZZ	37695	421378-801	POWER-AUDIO ADAPTER.....	
2	PEHZZ	37695	914598-801	COUPLER, TRANSMISSION LINE	
				END OF FIGURE	



CROSS-REFERENCE INDEXES

NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM
5895-01-256-9639	C-1	1
5820-01-255-4068	C-1	2
5820-01-254-9576	C-1	3
5985-01-280-3606	C-1	4
5965-00-043-3463	C-1	5
5820-01-255-4069	C-1	6
5330-00-942-5120	C-1	7
6135-01-088-2708	C1	8
5120-01-096-9410	C-2	2
5330-01-218-8312	C-2	3
5820-01-255-4070	C-2	4
5820-01-257-3142	C-2	5
5820-01-255-5631	C-2	6
5340-01-276-5783	C-2	7
5820-01-255-5630	C-2	8
5355-01-283-6567	C-3	1
5355-01-283-6568	C-3	2
5935-01-321-8082	C-3	3
5930-01-208-2271	C-3	4
5930-01-324-3265	C-3	5
5935-01-099-0005	C-3	6
5310-00-368-4467	C-3	8
5985-01-325-1800	C-3	9
5820-01-276-0380	C-4	1
5985-01-097-7337	C-4	2

STOCK NUMBER	FIG.	ITEM

CROSS-REFERENCE INDEXES

PART NUMBER INDEX

FSCM	PART NUMBER	STOCK NUMBER	FIG.	ITEM
80058	RT-1547/PRC-126	5895-01-256-9639	C-1	1
37695	349924-1	5820-01-255-4068	C-1	2
37695	513250-1	5895-01-254-9576	C-1	3
37695	721153-3	5985-01-280-3606	C-1	4
80058	H-250/U	5965-00-043-3463	C-1	5
37695	914153-805	5820-01-255-4069	C-1	6
96906	MS9068-024	5330-00-942-5120	C-1	7
80058	BA-5588/U	6135-01-088-2708	C-1	8
80063	159828		C-2	1
37695	808234-1	5120-01-096-9410	C-2	2
37695	345110-1	5330-01-218-8312	C-2	3
37695	918267-804	5820-01-255-4070	C-2	4
37695	815586-821	5820-01-257-3142	C-2	5
37695	816173-821	5820-01-255-5631	C-2	6
37695	817455-801	5340-01-276-5783	C-2	7
37695	815587-822	5820-01-255-5630	C-2	8
37695	517448-1	5355-01 -283-6567	C-3	1
37695	517448-2	5355-01-283-6568	C-3	2
37695	186137-5	5935-01-321-8082	C-3	3
81073	39-351 BLK	5930-01-208-2271	C-3	4
37695	165803-1	5930-01-324-3265	C-3	5
98278	095-9003-0024	5935-01-099-0005	C-3	6
37695	349619-3		C-3	7
36659	516502-2	5310-00-368-4467	C-3	8
37695	187055-1	5985-01-325-1800	C-3	9
37695	421378-801	5820-01-276-0380	C-4	1
37695	914598-801	5985-01-097-7337	C-4	2

CROSS-REFERENCE INDEXES

FIGURE AND ITEM NUMBER INDEX

FIG.	ITEM	STOCK NUMBER	FSCM	PART NUMBER
C-1	1	5895-01 -256-9639	80058	RT-1547/PRC-126
C-1	2	5820-01-255-4068	37695	349924-1
C-1	3	5820-01-254-9576	37695	513250-1
C-1	4	5985-01-280-3606	37695	721153-3
C-1	5	5965-00-043-3463	80058	H-250/U
C-1	6	5820-01-255-4069	37695	914153-805
C-1	7	5330-00-942-5120	96906	MS9068-024
C-1	8	6135-01-088-2708	80058	BA-5588/U
C-2	1		80063	159828
C-2	2	5120-01-096-9410	37695	808234-1
C-2	3	5330-01-218-8312	37695	345110-1
C-2	4	5820-01-255-4070	37695	918267-804
C-2	5	5820-01-257-3142	37695	815586-821
C-2	6	5820-01-255-5631	37695	816173-821
C-2	7	5340-01-276-5783	37695	817455-801
C-2	8	5820-01-255-5630	37695	815587-822
C-3	1	5355-01-283-6567	37695	517448-1
C-3	2	5355-01-283-6568	37695	517448-2
C-3	3	5935-01-321-8082	37695	186137-5
C-3	4	5930-01-208-2271	81073	39-351 BLK
C-3	5	5930-01-324-3265	37695	165803-1
C-3	6	5935-01-099-0005	98278	095-9003-0024
C-3	7		37695	349619-3
C-3	8	5310-00-368-4467	36659	516502-2
C-3	9	5985-01-325-1800	37695	187055-1
C-4	1	5820-01-276-0380	37695	421378-801
C-4	2	5985-01-097-7337	37695	914598-801

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

SECTION I
INTRODUCTION

D-1 SCOPE.

This appendix lists expendable supplies and materials you will need to operate and maintain the Radio Set AN/PRC-126. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

D-2 EXPLANATION OF COLUMNS.

a. Column (1) - National Stock Number. This is the National Stock Number assigned to the item. Use it to request or requisition the item.

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

O - Organizational Maintenance

F - Direct Supply Maintenance

H - General Support Maintenance

c. Column (3) Description. Indicates the Federal item name and if required, a description to identify the item.

d. Column (4) Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (eg., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) NATIONAL STOCK NUMBER	(2) LEVEL	(3) DESCRIPTION	(4) UNIT OF MEASURE
6850-00-177-5094	C	SILICON COMPOUND	oz
8020-00-721-9657	F	BRUSH	ea
8305-00-222-2423	C	CLOTH	yd
8010-00-587-3157	F	PAINT	oz
5350-00-186-8854	F	SANDPAPER	ea
6850-00-984-5853	F	SOLVENT (trichlorotrifluoroethane)	oz
	F	THINNER	oz
6135-01-088-2708	C	BATTERY, BA-5588/U (Lithium)	ea
6135-01-094-6536	C	BATTERY, BA-1588/U (Mercury) (Optional)	ea
6140-01-091-1536	C	BATTERY. BB-588/U (NICAD) (Optional)	ea
8020-00-597-5301	F	BRUSH	ea
8415-00-266-8673	F	GLOVES	pr

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Stateside Army Depot
ATTN: AMSTA-US
Stateside, N.J. 07703-5007

DATE SENT
10 July 1975

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-20P	23 Jan 78	Radar Set AN/PRC-76

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO
33			
44		19	
45			

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

For item 2, change the NSN to read: 5835-00-134-9186.
Reason: Accuracy.

Identify the cover on the junction box (item no. 5).
Reason: It is a separate item and is not called out on figure 19.

Add the cover of the junction box as an item in the listing for figure 19.
Reason: Same as above

SAMPLE

PRINTED NAME GRADE OR TITLE AND TELEPHONE NUMBER
SSG I. M. DeSpirit of 999-1776

SIGN HERE
I. M. DeSpirit

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TM 11-5820-1025-24&P	1 Sept 1988	Radio Set AN/PRC-126

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